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# ARITHMETICAL EXAMPLES

FOR

AND SCHOOL USE.

## PART I.

00 NEW QUESTIONS FROM SIMPLE
ITION TO PRACTICE.

BY

AM DAVIS, B.A.

-SIXTH THOUSAND.

REVISED AND CORRECTED.

London: LONGMAN & CO. Edinburgh: OLIVER & BOYD.
Dublin: J. ROBERTSON & CO. Melbourne: G. ROBERTSON.

1864.

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## NOTICE.

*New Editions of the* KEYS *to* DAVIS'S ARITHMETICAL EXAMPLES, Parts I. and II., are in preparation, bringing up the Answers to the New Editions of the "Examples." Meantime, the Answers to Fractions, Decimals, and Practice will, as heretofore, be found in the "Key to Part II.," and the Answers to the *new* matter in Part II. may be had gratuitously on application to Messrs. LONGMAN and Co.

LONDON, *July*, 1864.

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BIBLIOTHECA BODLEIANA

# ARITHMETICAL TABLES.

## 1. MULTIPLICATION TABLE.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 |
| 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 | 77 | 84 |
| 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |
| 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | 90 | 99 | 108 |
| 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 110 | 121 | 132 |
| 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 |

## 2. PENCE TABLE.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12d. | are | 1s. | 0d | 84 | are | 7 | 0 |
| 20 | „ | 1 | 8 | 90 | „ | 7 | 6 |
| 24 | „ | 2 | 0 | 96 | „ | 8 | 0 |
| 30 | „ | 2 | 6 | 100 | „ | 8 | 4 |
| 36 | „ | 3 | 0 | 108 | „ | 9 | 0 |
| 40 | „ | 3 | 4 | 110 | „ | 9 | 2 |
| 48 | „ | 4 | 0 | 120 | „ | 10 | 0 |
| 50 | „ | 4 | 2 | 130 | „ | 10 | 10 |
| 60 | „ | 5 | 0 | 132 | „ | 11 | 0 |
| 70 | „ | 5 | 10 | 140 | „ | 11 | 8 |
| 72 | „ | 6 | 0 | 144 | „ | 12 | 0 |
| 80 | „ | 6 | 8 | 150 | „ | 12 | 6 |

## 3. ALIQUOT PARTS.

### *Of a £.*

| s. | d. | | £ |
|---|---|---|---|
| 10 | 0 | are | $\frac{1}{2}$ |
| 6 | 8 | | $\frac{1}{3}$ |
| 5 | 0 | | $\frac{1}{4}$ |
| 4 | 0 | | $\frac{1}{5}$ |
| 3 | 4 | | $\frac{1}{6}$ |
| 2 | 6 | | $\frac{1}{8}$ |
| 2 | 0 | | $\frac{1}{10}$ |
| 1 | 8 | | $\frac{1}{12}$ |
| 1 | 4 | | $\frac{1}{15}$ |
| 1 | 3 | | $\frac{1}{16}$ |
| 1 | 0 | | $\frac{1}{20}$ |
| 0 | 8 | | $\frac{1}{30}$ |
| 0 | 6 | | $\frac{1}{40}$ |

### *Of a Shilling.*

| d. | | s. |
|---|---|---|
| 6 | are | $\frac{1}{2}$ |
| 4 | | $\frac{1}{3}$ |
| 3 | | $\frac{1}{4}$ |
| 2 | | $\frac{1}{6}$ |
| $1\frac{1}{2}$ | | $\frac{1}{8}$ |
| 1 | | $\frac{1}{12}$ |

### *Of a Penny.*

2 q. are $\frac{1}{2}$

1 q. is $\frac{1}{4}$

### *Of a Ton.*

| cwt. | | ton. |
|---|---|---|
| 10 | are | $\frac{1}{2}$ |
| 5 | | $\frac{1}{4}$ |

### *Of a Ton.*

| cwt. | | ton. |
|---|---|---|
| 4 | are | $\frac{1}{5}$ |
| 2 3qr. 12lb. | | $\frac{1}{7}$ |
| $2\frac{1}{2}$ | | $\frac{1}{8}$ |
| 2 | | $\frac{1}{10}$ |
| 1 | | $\frac{1}{20}$ |

### *Of a Cwt.*

| qr. | lb. | | cwt. |
|---|---|---|---|
| 2 or | 56 | are | $\frac{1}{2}$ |
| 1 or | 28 | | $\frac{1}{4}$ |
| | 16 | | $\frac{1}{7}$ |
| | 14 | | $\frac{1}{8}$ |
| | 8 | | $\frac{1}{14}$ |
| | 7 | | $\frac{1}{16}$ |

### *Of a Quarter.*

| lb. | | qr. |
|---|---|---|
| 14 | are | $\frac{1}{2}$ |
| 7 | | $\frac{1}{4}$ |
| 4 | | $\frac{1}{7}$ |
| $3\frac{1}{2}$ | | $\frac{1}{8}$ |
| 2 | | $\frac{1}{14}$ |
| $1\frac{3}{4}$ | | $\frac{1}{16}$ |
| 1 | | $\frac{1}{28}$ |

### *Of a lb.*

| oz. | | lb. |
|---|---|---|
| 8 | are | $\frac{1}{2}$ |
| 4 | | $\frac{1}{4}$ |
| 2 | | $\frac{1}{8}$ |
| 1 | | $\frac{1}{16}$ |

## 4. TROY WEIGHT.

24 grains *gr.* = 1 pennyweight *dwt.*
20 pennyweights = 1 ounce *oz.*
12 ounces = 1 pound *lb.*

## 5. AVOIRDUPOIS WEIGHT.

16 drams = 1 ounce *oz.*
16 ounces = 1 pound *lb.*
14 pounds = 1 stone *st.*
28 pounds = 1 quarter *qr.*
4 qrs. or 8st. or 112 lbs. = 1 hundredweight *cwt.*
20 hundred weights = 1 ton *t.*

## 6. APOTHECARIES' WEIGHT.

20 grains (troy) = 1 scruple ℈
3 scruples = 1 dram ʒ
8 drams = 1 ounce ℥
12 ounces = 1 pound *lb.*

## 7. APOTHECARIES' FLUID MEASURE.

60 minims (m) = 1 fluid dram f. ʒ
8 fluid drams = 1 fluid ounce f. ℥
20 fluid ounces = 1 pint O.
8 pints = 1 gallon C.

### 8. LONG MEASURE.

12 inches (*in.*) = 1 foot *ft.*
3 feet = 1 yard *yd.*
2 yards = 1 fathom *fa.*
5½ yards = 1 rod, pole, or perch *p.*
4 poles or 22 yds = 1 land-chain *ch.*
40 poles = 1 furlong *fur.*
8 furlongs or 1760 yds. = 1 mile *m.*
3 miles = 1 league *l.*

### 9. CLOTH MEASURE.

2¼ inches = 1 nail *n.*
4 nails = 1 quarter *qr.*
4 quarters = 1 yard *yd.*
3 quarters = 1 Flemish ell *Fl.e.*
5 quarters = 1 English ell *E.e.*
6 quarters = 1 French ell *F.e.*

### 10. SQUARE MEASURE.

144 square inches (*sq. in.*) = 1 square foot *sq. ft.*
9 square feet = 1 square yd. *sq. yd.*
30¼ square yards = 1 rod, pole, or perch
40 perches = 1 rood *r.*
4 roods or 4840 yds = 1 acre *a.*
10,000 square links = 1 square chain
10 square chains, or 100,000 links = 1 acre.
640 acres = 1 square mile *m.*

### 11. CUBIC OR SOLID MEASURE.

1,728 cubic inches = 1 cubic foot.
27 cubic feet = 1 cubic yard.
40 ft. of round, or 50 ft. of hewn, timber = 1 ton, or load.
42 cubic feet = 1 ton of shipping.

### 12. WINE AND SPIRIT MEASURE.

4 gills = 1 pint *pt.*
2 pints = 1 quart *qt.*
4 quarts = 1 gallon *gal.*
63 gallons = 1 hogshead *hhd.*
84 gallons = 1 puncheon *pun.*
2 hogsheads, or 126 gals. = 1 pipe or butt.
4 hogsheads, or 252 gals. = 1 tun.

### 13. ALE, BEER, AND PORTER MEASURE.

2 pints = 1 quart *qt.*
4 quarts = 1 gallon *gal.*
9 gallons = 1 firkin *fir.*
2 firkins or 18 gallons = 1 kilderkin *kil.*
2 kilderkins or 36 gals. = 1 barrel *bar.*
kilderkins or 54 gals. = 1 hhd. *hhd.*
gsheads or 108 gals. = 1 butt.

### 14. DRY MEASURE.

2 pints = 1 quart *qt.*
4 quarts = 1 gallon *gal.*
2 gallons = 1 peck *pk.*
4 pecks = 1 bushel *bu.*
2 bushels = 1 strike *str.*
4 bushels = 1 sack
8 bushels or 2 sacks = 1 quarter *qr.*
5 quarters = 1 wey, or load.
2 loads = 1 last

### 15. PAPER.

24 sheets = 1 quire.
20 quires = 1 ream.
43 quires = 1 printer's bundle.

### 16. TIME.

60 seconds (*sec.*) = 1 minute *min.*
60 minutes = 1 hour *hr.*
24 hours = 1 day *d.*
7 days = 1 week *wk.*
52 weeks 1 day 6 hours, or 365 days 6 hours } A Julian Year *yr.*
365 days 5 hours 48 min. 51½ sec. } A Solar Year.
100 years .. .. .. A century.

### 17. QUARTER DAYS.

Lady-day, 25th of March. Midsummer, 24th of June. Michaelmas, 29th of September. Christmas, 25th of December.

### 18. GEOMETRY.

60 seconds (″) = 1 minute ′
60 minutes = 1 degree °
90 degrees = 1 quadrant.
360 degrees, or 4 quadrants = 1 circle.

### 19. DUODECIMALS.

12 fourths (⁗) = 1 third ‴
12 thirds = 1 second ″
12 seconds = 1 first ′
12 firsts = 1 foot.

### 20. INVOLUTION.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Square of | 1 | is | 1 | Cube of | 1 | is | 1 |
| „ | 2 | „ | 4 | „ | 2 | „ | 8 |
| „ | 3 | „ | 9 | „ | 3 | „ | 27 |
| „ | 4 | „ | 16 | „ | 4 | „ | 64 |
| „ | 5 | „ | 25 | „ | 5 | „ | 125 |
| „ | 6 | „ | 36 | „ | 6 | „ | 216 |
| „ | 7 | „ | 49 | „ | 7 | „ | 343 |
| „ | 8 | „ | 64 | „ | 8 | „ | 512 |
| „ | 9 | „ | 81 | „ | 9 | „ | 729 |
| „ | 10 | „ | 100 | „ | 10 | „ | 1000 |

This table may be applied to Evolution by reversing it.

# NUMERATION AND NOTATION.

THE Numeration of Arabic figures is best taught by reading every number employed in teaching the early rules of Arithmetic, and their Notation by writing all such numbers from dictation.

**Write in Arabic characters :—**

1. VI
2. VIII
3. IV
4. VII
5. IX
6. XI
7. XIII
8. XVI
9. XIV
10. XVII
11. XXII
12. XXVII
13. XXX
14. XXXV
15. XXIX
16. XLI
17. XLIV
18. XLIX
19. L
20. LIII
21. LVI
22. LX
23. LIV
24. LIX
25. LXXI
26. LXXXIV
27. XC
28. XCII
29. XCIX
30. C
31. CIV
32. CXXII
33. CC
34. CCXL
35. CCCL
36. CCCXL
37. D
38. DCCCXXIV
39. DCCLXIV
40. M
41. MDCLXX
42. $\overline{\mathrm{II}}$
43. $\overline{\mathrm{III}}$ DLX
44. $\overline{\mathrm{IV}}$ CXC
45. $\overline{\mathrm{VIII}}$ DXLII
46. $\overline{\mathrm{X}}$ DLXXIV
47. $\overline{\mathrm{CX}}$
48. $\overline{\mathrm{CCIII}}$ CL
49. $\overline{\mathrm{CCCLX}}$ DCCCX
50. $\overline{\mathrm{DCCCLIV}}$
51. $\overline{\mathrm{M}}$
52. $\overline{\mathrm{MDC}}$ LVII
53. $\overline{\mathrm{MMDXVI}}$
54. $\overline{\mathrm{MDCXXX}}$
55. $\overline{\mathrm{DCXXXIV}}$ DX
56. $\overline{\mathrm{MMM}}$
57. $\overline{\mathrm{MCCX}}$
58. $\overline{\mathrm{CCCXL}}$ DXXIV
59. $\overline{\mathrm{CCXXV}}$ DCLXX
60. $\overline{\mathrm{M}}$ CCXLI
61. $\overline{\mathrm{MMMDC}}$
62. $\overline{\mathrm{MCC}}$ DCC
63. $\overline{\mathrm{LX}}$ DCCCXLI
64. $\overline{\mathrm{MDCCLXIV}}$ D
65. $\overline{\mathrm{MCCXL}}$
66. $\overline{\mathrm{DCC}}$ DCCLXIV
67. $\overline{\mathrm{DCCXC}}$ XCV
68. MDCCCCXCIV
69. $\overline{\mathrm{MDCXXIII}}$ DLV
70. $\overline{\mathrm{MCCXXV}}$ CXV
71. $\overline{\mathrm{MMMM}}$ DL
72. $\overline{\mathrm{MMDLXX}}$ CCC
73. MDCCCCXCIV
74. $\overline{\mathrm{MCCLXI}}$ XXV
75. $\overline{\mathrm{CCCCLIV}}$ DCCCL
76. $\overline{\mathrm{DCCCXCIV}}$ DLVI
77. $\overline{\mathrm{MDCCCX}}$ DVI
78. MDCCCLXI

Write in Roman characters:—

79. 5
80. 8
81. 9
82. 12
83. 14
84. 16
85. 19
86. 24
87. 29
88. 37
89. 40
90. 44
91. 49
92. 80
93. 58
94. 60
95. 64
96. 73
97. 81
98. 92
99. 104
100. 127
101. 151
102. 273
103. 564
104. 599
105. 873
106. 647
107. 1872
108. 3964
109. 5621
110. 7843
111. 9568
112. 10760
113. 12584
114. 57297
115. 85742
116. 90354
117. 157540
118. 293864
119. 759231
120. 968582
121. 1729842
122. 1200850
123. 1007641
124. 5008700
125. 2170023
126. 1508150
127. 2131501
128. 2005641
129. 1521380
130. 56413
131. 200087
132. 15682

## SIMPLE ADDITION.

| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. |
|---|---|---|---|---|---|---|---|---|---|
| 234 | 568 | 784 | 789 | 879 | 648 | 853 | 678 | 853 | 218 |
| 567 | 917 | 613 | 643 | 184 | 721 | 297 | 154 | 218 | 347 |
| 890 | 843 | 289 | 218 | 639 | 938 | 809 | 397 | 560 | 685 |
| 123 | 284 | 764 | 743 | 281 | 417 | 278 | 842 | 853 | 918 |
| 456 | 731 | 518 | 621 | 758 | 648 | 641 | 185 | 740 | 342 |
| 789 | 942 | 723 | 964 | 163 | 279 | 032 | 674 | 197 | 178 |
| 784 | 568 | 184 | 856 | 157 | 739 | 648 | 913 | 751 | 192 |
| 319 | 752 | 739 | 187 | 648 | 284 | 178 | 284 | 634 | 185 |

| 11. | 12. | 13. | 14. | 15. | 16. | 17. | 18. |
|---|---|---|---|---|---|---|---|
| 7643 | 6789 | 8564 | 7564 | 6419 | 6481 | 8439 | 7192 |
| 1528 | 8437 | 1932 | 1932 | 3874 | 9582 | 6487 | 7168 |
| 7419 | 2194 | 1584 | 8795 | 2859 | 1974 | 7159 | 8432 |
| 6583 | 5863 | 6531 | 1843 | 6400 | 6139 | 7284 | 1596 |
| 7216 | 7854 | 9486 | 7481 | 7198 | 2156 | 8573 | 2859 |
| 5084 | 3192 | 1539 | 9643 | 2136 | 4187 | 6859 | 2978 |
| 1659 | 6481 | 2841 | 2184 | 7564 | 6192 | 7893 | 2899 |
| 2347 | 7237 | 6187 | 7859 | 1985 | 3856 | 9898 | 8976 |

| 19. | 20. | 21. | 22. | 23. | 24. | 25. | 26. |
|---|---|---|---|---|---|---|---|
| 6789 | 3464 | 5678 | 7413 | 7413 | 2184 | 7391 | 5674 |
| 5649 | 3417 | 7642 | 8513 | 6908 | 7159 | 6438 | 2193 |
| 3516 | 7851 | 2139 | 6742 | 8593 | 8564 | 7189 | 2874 |
| 4913 | 8746 | 9281 | 9732 | 1847 | 1659 | 3187 | 6472 |
| 2213 | 8574 | 6198 | 5132 | 8576 | 2194 | 3764 | 1893 |
| 9158 | 6172 | 8139 | 2546 | 7189 | 2563 | 8564 | 1976 |
| 8213 | 6418 | 7513 | 2843 | 6417 | 8567 | 2184 | 7869 |

| 27. | 28. | 29. | 30. | 31. | 32. | 33. | 34. |
|---|---|---|---|---|---|---|---|
| 5613 | 5187 | 1843 | 8765 | 8564 | 8567 | 1564 | 5678 |
| 2698 | 6438 | 6219 | 1928 | 7213 | 8219 | 2138 | 9012 |
| 1741 | 7159 | 8476 | 7487 | 9584 | 7318 | 1742 | 3456 |
| 3328 | 2183 | 8239 | 6958 | 2867 | 5187 | 1987 | 7890 |
| 5796 | 6479 | 7856 | 5431 | 8737 | 6413 | 6479 | 1234 |
| 6863 | 2591 | 4138 | 9824 | 5864 | 2184 | 2872 | 5678 |
| 4748 | 7823 | 2564 | 6591 | 1928 | 7178 | 1234 | 9123 |

| 35. | 36. | 37. | 38. | 39. | 40. | 41. | 42. |
|---|---|---|---|---|---|---|---|
| 7643 | 6438 | 9784 | 1564 | 5982 | 5198 | 6473 | 7492 |
| 6129 | 1592 | 6411 | 1523 | 1793 | 6413 | 8512 | 1853 |
| 4751 | 7850 | 9231 | 8439 | 6489 | 7518 | 6789 | 6571 |
| 1846 | 9183 | 7485 | 6491 | 7218 | 0419 | 2918 | 8297 |
| 3518 | 6478 | 6493 | 8592 | 9643 | 2856 | 3743 | 8653 |
| 2743 | 1586 | 8512 | 3843 | 8597 | 6708 | 6518 | 6472 |
| 7859 | 2134 | 3178 | 6587 | 6478 | 2137 | 2138 | 1875 |

| 43. | 44. | 45. | 43. | 47. | 48. | 49. | 50. |
|---|---|---|---|---|---|---|---|
| 5681 | 6578 | 6592 | 2347 | 7821 | 5198 | 1583 | 6584 |
| 6734 | 2134 | 1583 | 6829 | 3184 | 6172 | 7631 | 1987 |
| 7219 | 7863 | 8751 | 1987 | 7648 | 8374 | 9285 | 6479 |
| 8658 | 2951 | 7218 | 6473 | 2138 | 1865 | 7193 | 2397 |
| 5734 | 3876 | 5623 | 1284 | 7643 | 2184 | 6419 | 6874 |
| 7272 | 1584 | 1584 | 7981 | 7859 | 7178 | 2857 | 1976 |
| 2857 | 2389 | 7189 | 3564 | 2186 | 2139 | 8438 | 5843 |

| 51. | 52. | 53. | 54. | 55. | 56. | 57. | 58. |
|---|---|---|---|---|---|---|---|
| 1568 | 5784 | 7584 | 5183 | 6473 | 6874 | 9186 | 5186 |
| 2741 | 1932 | 1237 | 7427 | 1924 | 1893 | 7412 | 2187 |
| 3723 | 1587 | 6478 | 6518 | 6987 | 6487 | 9183 | 9708 |
| 4897 | 6479 | 5192 | 5907 | 6592 | 1582 | 3692 | 6479 |
| 5689 | 2859 | 3164 | 8796 | 8976 | 1569 | 9874 | 2384 |
| 6573 | 3174 | 7158 | 1587 | 5134 | 8923 | 6491 | 6189 |
| 7641 | 6198 | 5769 | 6483 | 8215 | 6849 | 9234 | 1391 |

| 59. | 60. | 61. | 62. | 63. | 64. |
|---|---|---|---|---|---|
| 12345 | 56789 | 93478 | 75432 | 15432 | 98746 |
| 67890 | 74321 | 56752 | 19764 | 74189 | 15432 |
| 98764 | 58417 | 91854 | 85965 | 64321 | 19287 |
| 53210 | 65785 | 31976 | 58632 | 96571 | 64839 |
| 12345 | 37218 | 58972 | 91084 | 87432 | 25197 |
| 67890 | 51856 | 54987 | 76382 | 17284 | 64397 |
| 09876 | 97321 | 63219 | 59219 | 56784 | 84392 |
| 54321 | 58473 | 85418 | 99760 | 31972 | 18729 |

| 65. | 66. | 67. | 68. | 69. | 70. |
|---|---|---|---|---|---|
| 75432 | 51987 | 56784 | 93218 | 76437 | 51742 |
| 17856 | 64398 | 31928 | 64789 | 85643 | 87369 |
| 90853 | 57643 | 74364 | 31927 | 67218 | 25680 |
| 71928 | 21764 | 31965 | 64978 | 43764 | 72984 |
| 45671 | 82374 | 87413 | 74319 | 15728 | 16875 |
| 92137 | 16725 | 67641 | 21643 | 64719 | 79008 |
| 84158 | 64832 | 21378 | 39672 | 83764 | 21346 |
| 67213 | 19643 | 43164 | 14317 | 21857 | 78519 |

| 71. | 72. | 73. | 74. | 75. | 76. |
|---|---|---|---|---|---|
| 58437 | 93743 | 97643 | 15643 | 64318 | 21846 |
| 61928 | 21864 | 21384 | 28458 | 17215 | 73194 |
| 53479 | 75876 | 71638 | 75423 | 64387 | 21867 |
| 18568 | 21384 | 21900 | 72980 | 71852 | 35864 |
| 74213 | 65768 | 83586 | 50864 | 84376 | 32175 |
| 98764 | 21379 | 74329 | 21357 | 15984 | 63187 |
| 21874 | 51964 | 79638 | 64718 | 64872 | 23765 |
| 56879 | 21385 | 54193 | 23784 | 19387 | 76432 |

| 77. | 78. | 79. | 80. | 81. | 82. |
|---|---|---|---|---|---|
| 74821 | 64372 | 64751 | 754 | 29 | 649 |
| 37564 | 15478 | 2831 | 67921 | 7643 | 17853 |
| 15782 | 63192 | 642 | 56 | 18213 | 64 |
| 31643 | 15837 | 27 | 1764 | 64 | 9 |
| 57843 | 44387 | 9 | 62 | 8728 | 8764 |
| 64892 | 58674 | 18 | 5964 | 6 | 648 |
| 73899 | 21237 | 176 | 18721 | 549 | 59 |
| 97648 | 78432 | 1542 | 653 | 67852 | 67853 |
| 59213 | 19678 | 68751 | 72 | 64 | 64 |

83. 1564 + 8574 + 3926 + 8439 + 8598 + 6789 + 8764 + 3492
84. 7643 + 8754 + 8527 + 7964 + 8009 + 5070 + 7034 + 5784
85. 5863 + 7642 + 7645 + 8567 + 8529 + 3584 + 2186 + 1592
86. 7643 + 8528 + 9186 + 8599 + 7215 + 4853 + 5843 + 3485
87. 6543 + 3546 + 5643 + 4653 + 5876 + 8576 + 7685 + 6578
88. 5874 + 3592 + 7564 + 8765 + 6539 + 5842 + 4371 + 3658
89. 2186 + 1764 + 7018 + 2856 + 1876 + 2534 + 3178 + 1294
90. 76921 + 58346 + 87521 + 86434 + 19682 + 8764341
91. 19823 + 60587 + 75333 + 82177 + 39644 + 5687274
92. 17853 + 85471 + 92846 + 15698 + 87659 + 1932881
93. 76543 + 87884 + 99772 + 88594 + 66777 + 8778896
94. 58648 + 67893 + 85784 + 29933 + 34785 + 8591435
95. 867432 + 987643 + 685974 + 859213 + 717184342
96. 764321 + 859641 + 874327 + 896417 + 876482349
97. 158643 + 876421 + 856719 + 899976 + 778641742
98. 764321 + 123467 + 876543 + 345678 + 987645379
99. 568421 + 875346 + 786584 + 932184 + 198647238
100. 163 + 859864 + 83274 + 1758472 + 100 + 86056789 +
1594 + 1876321 + 859 + 17 + 867413 + 847642187890
101. 703 + 1 + 859640872 + 718 + 359784 + 6000 + 56789 +
586432 + 1584 + 765859842 + 76859327 + 8564329
102. 17643 + 259 + 8675008 + 31 + 9847643 + 876432 + 40
+ 7543 + 862 + 999887764 + 86583 + 82347 + 19689
103. 164321 + 87643 + 1764 + 189 + 854 + 39 + 26 + 8 + 9 +
70 + 8675 + 187 + 342 + 189 + 364 + 876 + 196 + 87 + 64
104. 176 + 83 + 8556 + 18 + 76432 + 847641 + 964 + 36879 +
874 + 396 + 649 + 854 + 3976 + 6542 + 39 + 85461 + 398
105. 196843298 + 156 + 87643 + 15896 + 43978 + 5672 +
1836 + 564 + 319 + 86 + 78543002 + 187658 + 367890
106. 64391 + 87643 + 17854 + 819 + 374 + 816 + 72 + 85643
+ 8764 + 1392 + 876 + 59 + 9 + 8764321984 + 3456789
107. 168743 + 80049 + 8764 + 879 + 821 + 7643418 + 1342 +
8643 + 198645 + 8764 + 76981 + 9784 + 39218 + 87647
108. 1564 + 734 + 1892 + 374 + 7321896 + 185643 + 15 + 7 +
876 + 53924 + 79 + 85 + 9763 + 85214 + 31784 + 6190
109. 563814972 + 8765432 + 87431 + 186432 + 596 + 84 +
876419 + 758 + 39 + 864 + 85 + 99 + 87 + 64 + 8167890
110. 7643218 + 198623 + 8592 + 198 + 643 + 9864 + 1982 +
86193 + 85427621 + 18543 + 641 + 1821 + 342 + 690
111. 5846 + 8321 + 1854 + 6392 + 1874 + 18596 + 374 + 17 +
6843 + 8792 + 198643 + 86198 + 865998 + 2345 + 7895

112. 75 + 84 + 61 + 73 + 82 + 1294 + 567 + 841 + 8474 + 781 + 3497 + 58 + 876784 + 3174 + 81546 + 3197 + 2134 + 856 + 71321 + 18467 + 813264 + 8134 + 1564

113. 7215 + 834 + 56143 + 81592813 + 56157 + 81234 + 1596 + 8413 + 87642 + 185 + 6473 + 15 + 743 + 21564 + 7564 + 3192 + 876432 + 97 + 847 + 9647 + 8121

114. 75613 + 821 + 78 + 9648 + 314 + 87649 + 513 + 8647 + 15978 + 31928 + 647 + 213 + 841 + 6178 + 8473 + 219 + 274384 + 86413 + 76413 + 1864 + 79 + 206 + 30005

115. 55238 + 76213 + 31843 + 764 + 64 + 9 + 8009 + 7004 + 5076 + 851 + 90003 + 8464 + 1596 + 12 + 397 + 156 + 84 + 31 + 8 + 9 + 684 + 3914 + 8516 + 76489

116. 5164 + 72937 + 841 + 67 + 9 + 800764 + 72158 + 13118 + 516784 + 3178 + 51643 + 817648 + 1234 + 856 + 51382 + 84138 + 215608 + 85 + 307 + 8164 + 71 + 84

117. 71378146 + 1764 + 85167 + 31478 + 867 + 5964 + 3174 + 214 + 8137 + 642 + 87648 + 30008109 + 7128 + 96 + 21576 + 18641 + 317 + 2189 + 31764 + 2182 + 3147

118. 6421 + 313 + 414 + 3178 + 31594 + 89 + 607 + 5074 + 16 + 5628 + 31764 + 815678 + 92 + 5176 + 31942 + 85647 + 2137 + 81472 + 21307 + 856 + 722 + 329 + 364 + 68

119. 3197 + 6742 + 8164 + 9168 + 7281 + 6174 + 61842 + 85 + 2196 + 817642 + 81 + 7003 + 215678 + 2156182 + 74138 + 912641 + 843 + 71872 + 81376 + 85641

120. 87643 + 2196 + 3178214 + 8564319 + 8562871 + 37 + 859 + 7642 + 8567 + 2647 + 3197 + 157 + 647 + 31 + 8764 + 721 + 847 + 9678 + 1584 + 19 + 76 + 82 + 9

NOTE.—The following table will afford 133,584 questions in Simple Addition, of from 3 lines to 32 each, by changing the number of columns or the number of lines taken. For example, columns 1, 2, 3, to line D, give the following addition: — 315 + 878 + 286 + 974. Add line E, or commence at column 2, and the question is completely altered. In a similar way a vast variety of questions is at command, any one of which can be instantly set to a class of any size, and the imperative need of long and varied additions is amply supplied. A few words of explanation, perhaps aided by a black board illustration, will enable any child at a glance to pick out his question from the table.

| | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 6 | 3 | 8 | 4 | 7 | 9 | 2 | 1 | 5 | 4 | 3 | 8 | 1 | 6 | 7 | 2 | 5 | 0 | 0 | 5 | 3 | 1 | 5 | A |
| B | 7 | 2 | 1 | 9 | 8 | 5 | 6 | 4 | 3 | 9 | 8 | 7 | 6 | 5 | 8 | 5 | 9 | 4 | 2 | 1 | 8 | 7 | 8 | B |
| C | 9 | 8 | 7 | 6 | 4 | 3 | 2 | 1 | 8 | 9 | 7 | 6 | 5 | 4 | 2 | 1 | 3 | 8 | 7 | 4 | 2 | 8 | 6 | C |
| D | 1 | 5 | 4 | 6 | 7 | 3 | 8 | 4 | 1 | 6 | 8 | 4 | 7 | 3 | 1 | 2 | 8 | 4 | 6 | 5 | 9 | 7 | 4 | D |
| E | 8 | 5 | 4 | 3 | 9 | 7 | 6 | 4 | 5 | 9 | 8 | 7 | 6 | 4 | 8 | 5 | 3 | 8 | 5 | 6 | 7 | 4 | 3 | E |
| F | 9 | 8 | 7 | 6 | 4 | 3 | 7 | 2 | 1 | 5 | 8 | 6 | 5 | 7 | 9 | 7 | 3 | 7 | 6 | 4 | 2 | 1 | 9 | F |
| G | 7 | 6 | 2 | 1 | 0 | 9 | 8 | 2 | 7 | 3 | 6 | 4 | 5 | 0 | 7 | 2 | 9 | 6 | 5 | 3 | 2 | 9 | 6 | G |
| H | 1 | 5 | 6 | 4 | 3 | 9 | 8 | 6 | 5 | 4 | 9 | 8 | 4 | 9 | 6 | 2 | 3 | 9 | 6 | 4 | 5 | 8 | 5 | H |
| I | 9 | 8 | 5 | 6 | 4 | 3 | 8 | 7 | 8 | 2 | 1 | 9 | 8 | 6 | 5 | 3 | 2 | 7 | 4 | 9 | 2 | 7 | 8 | I |
| J | 6 | 5 | 9 | 3 | 8 | 4 | 2 | 1 | 9 | 7 | 6 | 4 | 8 | 8 | 7 | 7 | 6 | 6 | 5 | 5 | 3 | 4 | 7 | J |
| K | 1 | 9 | 8 | 2 | 6 | 5 | 3 | 8 | 2 | 5 | 4 | 7 | 4 | 5 | 6 | 7 | 3 | 2 | 1 | 8 | 5 | 5 | 6 | K |
| L | 7 | 8 | 6 | 5 | 9 | 4 | 2 | 1 | 9 | 6 | 3 | 8 | 1 | 2 | 5 | 8 | 5 | 6 | 7 | 2 | 1 | 4 | 2 | L |
| M | 5 | 6 | 7 | 8 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 5 | 4 | 3 | 5 | M |
| N | 2 | 1 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 1 | 2 | 3 | 9 | 8 | 7 | 6 | 4 | 5 | 6 | 3 | N |
| O | 1 | 3 | 9 | 2 | 8 | 5 | 6 | 5 | 8 | 7 | 4 | 2 | 8 | 7 | 3 | 2 | 1 | 8 | 7 | 6 | 4 | 2 | 9 | O |
| P | 1 | 8 | 5 | 6 | 4 | 3 | 7 | 2 | 8 | 5 | 4 | 1 | 9 | 8 | 6 | 7 | 2 | 1 | 8 | 3 | 5 | 7 | 7 | P |
| Q | 6 | 8 | 2 | 1 | 9 | 5 | 3 | 6 | 2 | 1 | 9 | 8 | 5 | 4 | 6 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 8 | Q |
| R | 1 | 8 | 2 | 7 | 3 | 6 | 2 | 5 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 | 9 | 8 | 7 | 6 | 5 | 5 | R |
| S | 4 | 3 | 2 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | S |
| T | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 0 | 4 | 0 | 5 | 0 | 6 | 0 | 7 | 8 | 0 | 9 | T |
| U | 2 | 9 | 8 | 6 | 5 | 3 | 7 | 2 | 8 | 5 | 6 | 2 | 9 | 3 | 8 | 4 | 3 | 5 | 8 | 6 | 4 | 2 | 6 | U |
| V | 7 | 6 | 4 | 3 | 9 | 8 | 5 | 2 | 1 | 9 | 6 | 5 | 3 | 8 | 2 | 5 | 9 | 4 | 3 | 7 | 2 | 5 | 5 | V |
| W | 8 | 6 | 3 | 2 | 9 | 5 | 6 | 4 | 8 | 5 | 9 | 6 | 8 | 2 | 9 | 8 | 5 | 3 | 6 | 5 | 4 | 9 | 1 | W |
| X | 1 | 5 | 8 | 3 | 2 | 7 | 4 | 8 | 5 | 9 | 7 | 6 | 3 | 2 | 9 | 1 | 4 | 8 | 5 | 3 | 6 | 8 | 3 | X |
| Y | 9 | 2 | 1 | 9 | 3 | 4 | 6 | 7 | 8 | 2 | 3 | 5 | 8 | 4 | 8 | 7 | 6 | 5 | 3 | 9 | 2 | 7 | 9 | Y |
| Z | 7 | 8 | 6 | 2 | 1 | 3 | 9 | 3 | 6 | 8 | 4 | 5 | 7 | 8 | 2 | 8 | 5 | 9 | 6 | 5 | 8 | 8 | 8 | Z |
| 2A | 5 | 9 | 8 | 5 | 2 | 9 | 6 | 5 | 3 | 7 | 2 | 8 | 3 | 5 | 6 | 4 | 5 | 3 | 8 | 6 | 7 | 4 | 5 | 2A |
| 2B | 1 | 2 | 7 | 3 | 6 | 4 | 5 | 2 | 8 | 6 | 3 | 7 | 5 | 9 | 8 | 5 | 6 | 4 | 3 | 8 | 2 | 1 | 6 | 2B |
| 2C | 2 | 3 | 4 | 5 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 9 | 8 | 7 | 6 | 4 | 5 | 3 | 2 | 1 | 8 | 9 | 5 | 2C |
| 2D | 8 | 9 | 7 | 6 | 4 | 3 | 2 | 1 | 8 | 9 | 7 | 6 | 4 | 5 | 3 | 2 | 1 | 9 | 8 | 7 | 6 | 4 | 8 | 2D |
| 2E | 5 | 4 | 3 | 2 | 1 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 9 | 2 | 2E |
| 2F | 1 | 9 | 8 | 5 | 4 | 6 | 5 | 8 | 4 | 3 | 7 | 8 | 9 | 2 | 1 | 6 | 4 | 3 | 5 | 6 | 8 | 9 | 1 | 2F |
| | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | |

## SIMPLE SUBTRACTION.

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4. 85463274—64321989
5. 92184678—82346779
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7. 96432084—87219864
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9. 85643217—56481398
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11. 50086009—49568342
12. 68473289—58498678
13. 92134878—18964934
14. 89213467—56437428
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16. 100087623—8154678
17. 598432168—98756348
18. 6743218651—1587648
19. 785436214—85693416
20. 198640004—85693048
21. 859643218—98786548
22. 90081234—89793578
23. 856432199—85986734
24. 964321847—86921348
25. 714300070—19874937
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27. 687432916—87693479
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160. 100000000—7193764

## SIMPLE MULTIPLICATION.

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2. 72356 × 11, 12, 2, 3, 4, 5
3. 64587 × 6, 7, 8, 9, 10, 11
4. 59084 × 12, 2, 7, 3, 4, 5
5. 67805 × 6, 7, 8, 9, 10, 11
6. 58437 × 12, 2, 3, 4, 5, 6
7. 98642 × 7, 8, 9, 10, 11, 12
8. 76057 × 2, 3, 4, 5, 6, 7
9. 85607 × 8, 9, 10, 11, 12, 3
10. 64087 × 2, 4, 6, 8, 10, 12
11. 8764321897 × 2, 5, 6, 7
12. 7653821965 × 8, 9, 10, 11
13. 8500937658 × 12, 2, 3, 4
14. 6743729156 × 5, 6, 7, 8
15. 7540321874 × 9, 10, 11, 12
16. 6085432156 × 2, 3, 4, 5
17. 7408643192 × 6, 7, 8, 9
18. 5864321874 × 10, 11, 12, 2
19. 6097400317 × 3, 4, 5, 6
20. 7549321876 × 8, 5, 9, 7
21. 876543 × 72, 85, 96, 72
22. 596840 × 92, 75, 86, 93
23. 674472 × 86, 90, 70, 60
24. 507543 × 75, 89, 97, 80
25. 674319 × 79, 84, 32, 90
26. 567432 × 87, 64, 37, 85
27. 785437641 × 71, 85, 96
28. 592134690 × 89, 97, 64
29. 980005368 × 87, 64, 73
30. 756432578 × 94, 39, 65
31. 765432 × 754, 791, 856
32. 856434 × 872, 791, 854
33. 754631 × 764, 397, 856
34. 856532 × 591, 736, 892
35. 7856437847 × 856, 739
36. 5673876412 × 792, 859
37. 7680085431 × 897, 569
38. 7800976432 × 978, 591
39. 7543621874 × 857, 764
40. 564347 × 7568, 8592
41. 856789 × 5107, 7352
42. 752134 × 6008, 5076
43. 607432 × 5187, 6708
44. 567843 × 6098, 5327
45. 721985 × 7508, 3007
46. 85764215847 × 5084
47. 76437218 × 7803, 7506
48. 85670307 × 8764, 7008
49. 97638470 × 7085, 8764
50. 70085647 × 7098, 9865
51. 768437 × 75064, 85763
52. 876008 × 85709, 98640
53. 568709 × 70921, 85076
54. 678432 × 78905, 92860
55. 687407 × 75000, 87009
56. 785643789718 × 78059
57. 678757841327 × 80764
58. 517843218576 × 70582
59. 647854318421 × 87065
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62. 87543278598 × 807646
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66. 7586782197 × 8567807
67. 8564376421 × 7008643
68. 1927642137 × 8764721
69. 1987000764 × 7086920
70. 7568417892 × 807, 694
71. 85006000 × 980, 400097
72. 85764320 × 7876, 50008
73. 50700000 × 8560, 3946
74. 79280000 × 95070, 60937
75. 59860000 × 5960, 58009
76. 73000000 × 9060, 20008
77. 846737789 × 8431, 7218
78. 705318276 × 3704, 8917

79. 572138607 × 5723, 6419
80. 643178521 × 6782, 5187
81. 785132761 × 7192, 3574
82. 861993378 × 8972, 1586
83. 723158493 × 7285, 1643
84. 821587618 × 5176, 2384
85. 176431764 × 6178, 8764
86. 812381767 × 5318, 2178
87. 315863199 × 3167, 8513
88. 768431977 × 2188, 7764
89. 213847674 × 3928, 1976
90. 741368193 × 2134, 8876
91. 857637184 × 3982, 5946
92. 764378123 × 5748, 3927
93. 864210093 × 8725, 6431
94. 351742138 × 6437, 2193
95. 752843786 × 2159, 6483
96. 392817648 × 5963, 8724
97. 525913787 × 7643, 2198
98. 637841378 × 8764, 3194
99. 787874389 × 9236, 7184
100. 937865392 × 8743, 7219
101. 647819382 × 7642, 8539
102. 913785924 × 8765, 1342
103. 978218765 × 7983, 2864
104. 782196837 × 8576, 6934
105. 219853264 × 5198, 5296
106. 386219342 × 4963, 4873
107. 943826374 × 3218, 7492
108. 856392146 × 2193, 8653
109. 721963178 × 3982, 9637
110. 837648542 × 5968, 7692
111. 319874231 × 8579, 8234
112. 767879359 × 7254, 3968
113. 826493784 × 8639, 5824
114. 987821936 × 7293, 8416
115. 738219377 × 8417, 6328
116. 921864386 × 5198, 7423
117. 876431587 × 8764312
118. 982374186 × 7000081
119. 516438219 × 7821360
120. 378421896 × 5928578
121. 586371829 × 6738579
122. 776231987 × 8513874
123. 938216478 × 9722148
124. 876437872 × 8213976
125. 987864379 × 7218764
126. 828789643 × 8375642
127. 937841392 × 7643179
128. 284378648 × 9376819
129. 387649859 × 8767219
130. 856439082 × 7008001
131. 800765208 × 6000723
132. 721857647 × 8700800
133. 213764737 × 7210008
134. 843788293 × 8573108
135. 275361328 × 7462170
136. 563700820 × 6213764
137. 853822764 × 5132875
138. 743219867 × 5328476
139. 378215788 × 4218378
140. 938276477 × 3196471
141. 873298478 × 2897364
142. 764329783 × 5786439
143. 259136472 × 8837582
144. 387254854 × 7193821
145. 948375628 × 8764853
146. 721978543 × 2178641
147. 513827638 × 1987780
148. 370087021 × 8000009
149. 567008730 × 6785000
150. 218000000 × 5600000
151. 374800000 × 3170000
152. 587670000 × 5480000
153. 378760000 × 3100000
154. 284000000 × 5000000
155. 762800000 × 3700000
156. 541000000 × 8000000
157. 215785000 × 8500000
158. 741856000 × 9670000
159. 536185200 × 7438200
160. 246719820 × 5600000

## SIMPLE DIVISION.

1. 84639÷2, 3, 4, 5, 6, 7, 8
2. 79645÷8, 9, 10, 11, 12, 2
3. 86432÷3, 4, 5, 6, 7, 8, 9
4. 96532÷9, 10, 11, 12, 2, 4
5. 87601÷3, 5, 6, 7, 8, 9, 4
6. 90843÷10, 11, 12, 2, 3, 4
7. 58431÷5, 6, 4, 3, 2, 12
8. 48923÷11, 10, 9, 8, 7, 6
9. 38032÷5, 4, 3, 2, 3, 4
10. 85673÷5, 6, 7, 8, 9, 10
11. 7643274312÷11, 12, 2
12. 8564321345÷3, 4, 5, 6
13. 7864578567÷6, 7, 8, 9
14. 6432079432÷9, 10, 11
15. 5802643143÷12, 2, 3
16. 4820731568÷4, 5, 6, 7
17. 3192157841÷7, 8, 9, 6
18. 2861082134÷10, 11, 12
19. 9643198421÷2, 3, 4, 5
20. 8760092801÷5, 6, 7, 8
21. 678413÷13, 14, 15, 16
22. 786432÷17, 18, 19, 20
23. 856913÷21, 22, 23, 24
24. 751892÷25, 26, 27, 28
25. 846319÷29, 30, 31, 32
26. 867834512÷33, 34, 35
27. 743215684÷36, 37, 38
28. 565213419÷59, 68, 74
29. 678513592÷92, 78, 85
30. 785921346÷87, 74, 39
31. 874392÷588, 861, 937
32. 856439÷876, 749, 643
33. 723186÷672, 389, 752
34. 936421÷789, 307, 564
35. 785312÷654, 739, 541
36. 156783214÷859, 632
37. 678413274÷659, 394
38. 813214789÷784, 658
39. 846319218÷763, 841
40. 821364879÷852, 902
41. 785437÷3841, 7854
42. 638546÷5867, 2834
43. 786134÷3842, 5136
44. 568139÷3213, 2184
45. 682138÷1234, 8613
46. 89134678÷5134, 8216
47. 71392185÷7134, 6298
48. 81356413÷8590, 9213
49. 91385642÷6918, 7123
50. 85643132÷8154, 9213
51. 921346413÷87543, 347
52. 193264315÷79238, 642
53. 721568717÷82136, 115
54. 938467813÷75182, 219
55. 895653282÷95803, 764
56. 235681321÷23561, 391
57. 15678592÷784619, 138
58. 64875237÷641382, 158
59. 75643118÷183864, 704
60. 51984367÷756432, 319
61. 876213984÷61320, 212
62. 721846513÷73584, 264
63. 613218519÷861398, 541
64. 7213645186÷87613, 194
65. 5187628439÷98765, 436
66. 7421879263÷90800, 600
67. 500070000÷1270, 8900
68. 647320800÷12170, 870
69. 872138417421÷641, 30
70. 123400000000÷500, 80
71. 564139621÷8600, 8690
72. 672139800÷7680, 6800
73. 516000000÷5000, 8700
74. 754000000÷8564, 7193
75. 2134678154368÷29, 41
76. 7213841567821÷97, 38

77. 8764319841314÷84, 79
78. 5167238547813÷79, 29
79. 3859256374238÷82, 74
80. 5164827382371÷93, 86
81. 6483764923876÷52, 23
82. 8476431982767÷97, 39
83. 3921648573298÷58, 74
84. 5764392761587÷79, 84
85. 6783128471584÷82, 38
86. 519213841885÷127, 37
87. 318374286134÷568, 59
88. 586431376481÷582, 34
89. 678213586512÷983, 78
90. 721584319867÷397, 89
91. 851637821589÷593, 87
92. 74218378164÷964, 739
93. 56439865132÷847, 964
94. 38921008528÷721, 847
95. 51982317864÷852, 319
96. 64317821973÷738, 564
97. 93187643198÷843, 729
98. 85126371284÷329, 240
99. 16823140721÷564, 329
100. 64372187642÷872, 392
101. 84637815781÷927, 380
102. 64878213874÷564, 872
103. 29183864317÷234, 964
104. 37682198742÷570, 392
105. 67821931875÷764, 893
106. 21564871568÷392, 841
107. 64819378413÷281, 564
108. 96381378421÷647, 874
109. 51382128672÷859, 320
110. 17486193821÷647, 382
111. 76481937824÷728, 329
112. 78675938742÷829, 594
113. 37851968200÷920, 830
114. 57213859647÷582, 391
115. 28764785938÷291, 354
116. 67381728581÷700, 800
117. 17461823417÷80030
118. 16785132872÷80050
119. 21387413826÷76000
120. 37215841378÷64500
121. 58213748192÷70008
122. 31764182000÷78000
123. 31572180000÷90000
124. 32671583000÷59000
125. 51728364700÷29800
126. 67841397470÷26470
127. 51607788÷20000000
128. 60000000÷30000000
129. 51000000÷24000000
130. 73000000÷51000000
131. 93748000÷61000000
132. 3564318076÷851372
133. 63158192837÷63184
134. 528198385928÷6172
135. 3160751820000÷710
136. 5643700000000÷50
137. 37643218371528÷96
138. 64783100082137÷84
139. 72186418821376÷19
140. 5198674318421÷730
141. 647184319218÷6700
142. 5192867584÷376000
143. 27413852196÷35700
144. 39564393200÷36800
145. 57213460000÷57000
146. 68285621000÷68000
147. 73218417800÷78500
148. 87386875000÷64000
149. 821374679÷6431972
150. 5236481923÷715284
151. 379648123000÷8200
152. 398560831000÷9000
153. 564328562300÷7200
154. 518478237600÷8500
155. 7193800000÷120000
156. 6413708000÷123000

## QUESTIONS IN SIMPLE ADDITION, SUBTRACTION, MULTIPLICATION, AND DIVISION.

1. When will a boy born in 1854 be 12 years old?

2. A farmer has 6 fields with 8 cows in each; how many cows has he altogether?

3. If a boy loses 97 marbles out of 164, how many has he left?

4. If 144 lozenges be divided amongst 9 children, how many will each have?

5. If each page of a book contains 39 lines, and 27 letters in a line, what number of letters is there on the page?

6. A brick is 9 inches long; how many bricks long is a wall of 1,386 inches?

7. If a boy get 19 marks on Monday, 23 on Tuesday, 18 on Wednesday, 26 on Thursday, 31 on Friday, and 16 on Saturday, how many marks has he for the week?

8. If there are 728 chimney-pots on my side of the street, and 629 on the other, by how many does my side exceed the other?

9. A water-bottle holds 3 pints; how many times may it be filled out of 153 pints?

10. If 23 railway carriages have each 84 passengers, how many passengers in all?

11. If I spend 8 shillings in nuts, 14 in butter, 19 in tea, 15 in beef, and 17 in sugar, how many shillings do I spend in all?

12. A boy had 394 nuts, and lost 159, how many had he left?

13. If 194 volumes be taken out of a bookcase that had 757 in it, how many are left?

14. If there are 25 apples in a gallon, how many in 25 gallons?

15. If I have 420 books of equal size to arrange on 5 shelves, how many must I place on each?

16. A butcher carries out 15 lbs. of meat to his first customer, 26 to the second, 18 to the third, 11 to the fourth, 19 to the fifth, and 27 to the sixth; how many pounds does he take out altogether?

17. If a book has 96 pages, and 2,500 letters on a page, how many letters does it contain altogether?

18. What is the difference in population between two towns, one having 7,963 inhabitants, and the other 6,548?

19. If 18,795 additions have to be made by 5 persons, how many must each do?

20. If a party of fishermen make ten hauls, taking 3,160 herrings the first time, 79 the second, 1,787 the third, 87,642 the fourth, 700,000 the fifth, 6,849 the sixth, and half a million the four last times, how many do they take altogether?

21. If a dress-maker takes 27 stitches a minute, and works ten hours a day, how many stitches does she take daily?

22. If a father gives each of his 9 children 87 nuts, how many does he give to all?

23. If there are 20 threads in an inch of calico, how many threads in 3 yards?

24. If a farmer has 1,670 sheep, 34 cows, 17 heifers, 12 calves, 14 horses, 18 pigs, and 1 goat, how many head of cattle does he possess?

25. If a workman spends 4 pence daily in beer, how many pence would he spend in a life of 50 years?*

26. A smith strikes 10 blows a minute, and works 10 hours a day; how many blows does he strike in a week, a month of four weeks, and a year of 313 working days?

27. How many yards would 10,000 soldiers extend, walking 5 abreast, and half a yard between rank and rank, and each rank taking up 1 foot 6 inches?

28. The sun is 95,000,000 of miles off; how many yards?

29. A gardener plants 20 rows of cabbages, 17 in a row; how many plants does he set?

30. Distribute 9,000 lozenges amongst 300 boys, and how many will each get?

31. If 22 cricketers score 198 notches, how many does each average?

32. If a luggage train has 54 carriages, and each carries 5 tons, what is the weight of the train?

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* In this, and all questions up to p. 42, involving a year, reckon 365¼ days.

33. If a horse and cart are worth 25 pounds, and the cart itself worth 14 pounds, what is the value of the horse?

33A. What is the sum of eight thousand five hundred and forty, nine hundred and seven thousand six hundred and one, eight hundred and forty-one, seventy-four, and thirty-nine?

34. If a person owed £734, and paid back £154, £79, £32, and £229 at different times, how much does he still owe?

35. The number of art schools in the United Kingdom in 1860 was 78, and the persons instructed, 84,082; what was the average number of students for each school?

36. A single cod fish has been found to contain 9,344,000 eggs; how many eggs would there be in 174 such fish?

36A. The area of North America is 8,324,964 square miles, and the population, in 1859, 35,554,859; how many persons were there to a square mile?

37. The area of Lake Superior is 32,000 miles; Huron, 30,000; Michigan, 22,000; Great Bear, 14,000; Great Slave, 12,000; Winnipeg, 10,000; Erie, 9,600; Ontario, 6,300; Great Salt, 2,000; what is the united area of these great lakes?

38. The population of the United States in 1850 was 23,191,876, of which 3,204,313 were slaves; how many free persons were there to each slave?

39. The population of Naples in 1859 was 9,051,747; of Sardinia, 4,916,084; of the Papal States, 3,006,771; of Tuscany, 1,817,466; of Parma, 508,784; of Modena, 600,676; and of San Marino, 7,750; what was the population of the United Kingdom of Italy?

40. In 1851 there were 3,076,620 inhabited houses in England, and the population was 16,921,888; what was the average number of persons to each house?

41. How many shots would a fleet of 10 ships fire in 57 rounds, 3 of the ships having 91 guns each; 4 having 74 each; and the rest each 52?

42. How many yards of calico would a factory, working 10 hours a day, produce in a week from 305 looms, each making 5 yards an hour?

43. In 1851, the English woollen manufacture was estimated to produce goods to the value of £30,000,000, and it gave employment to 286,000; what value of goods was produced by each person?

44. If of an army of 30,000 men each man eats 16 ounces of food daily, how many ounces would the army consume in 12 weeks?

45. If two men build a house in 90 days, how long would 12 be doing the same work?

46. A quotient is 397 and the dividend 34,001,859; what is the divisor?

47. The circumference of the earth is 25,000 miles; how long would a man be going round the world at 15 miles an hour?

48. Water flows from a tub at the rate of 154 gallons a day; how many gallons will flow in 51 weeks?

49. If a quotient be 15,700 and divisor 2,312, what is the dividend?

50. The national debt is £793,375,199 and the population of England and Wales in 1851 was 17,927,614; what sum from each person would pay the debt?

51. The income of the established church in 1851 was estimated at £5,000,000, and the total number of benefices was 11,728; what is the average income of each?

52. The Atlantic has been sounded at the depth of 46,000 feet, whilst Mount Everest is 29,002 feet high; what is the extreme known inequality of the earth's surface in feet?

53. How many miles has a railway guard travelled who has gone between Liverpool and Manchester thrice (six journeys) daily for ten years, the distance being 33 miles?

54. The British army in 1857 numbered 244,716 men; if each man cost on an average £64, what do we pay annually for soldiers?

55. If each of our 244,716 soldiers instead of costing £64 produced £75 by useful labour, how many pounds would the nation gain annually?

56. In 1851 470,000 persons were employed in the cotton trade, and spun 595,725,958 lbs. of cotton yarn; how many pounds did each person average?

57. The wool produced in Great Britain is estimated at 120,000,000 lbs.; if a sheep produces 8 lbs., how many are kept in the kingdom?

58. In 1851 there were 46,042 day schools in the United Kingdom, with 2,144,378 scholars; how many pupils did each school average?

59. The wheel of a cart is 3 yards in circumference; how often will it turn round in going a mile?

60. A barrow wheel is 4 feet in circumference; how often will it turn in going 5,280 feet?

61. A bucket is let down into a well 54 times each week-day and 19 times each Sunday, and brings up three gallons each time; how many gallons are drawn up in four weeks?

62. If a man makes 1890 steps in walking a mile, how many steps will he make in a journey of 94 miles?

63. A ream of paper contains 20 quires, a quire 24 sheets; if each folio page has 33 lines upon it, how many lines could be written on the whole ream?

64. Divide the continued product of 37, 64, 81, and 157 by 56.

65. A boy has 97 oranges, and after keeping 11 for himself, divides the remainder amongst two boys; how many will each get?

66. What is the difference between the 150th part of 300,000 and the 200th part of a million?

67. How long would a tap discharging 8 gallons an hour be in emptying a cistern containing 1,000 gallons?

68. Each man in a regiment containing 874 gets £15 prize money, how much does the whole regiment receive?

69. How many boxes in 34 trucks averaging 27 each?

70. If a child's pulse beat 74 times a minute, how often is that in a day?

71. If an author writes a page in half an hour, how many hours would he be in composing 3 volumes of 154 pages each?

72. A baker makes 50 loaves each day, exclusive of Sundays; how many in 5 years?

73. How many hours does a person gain by daily rising at 5 o'clock instead of 6, during 20 years?

74. If a barber shaves for a half-penny, and finds at the end of 4 weeks he has taken 600 pence, how many men has he shaved daily, not including Sundays?

75. In an army of 10,000 men there are 25 men to every officer, how many officers are there?

76. France contains 207,000 square miles and 35,782,000 people; how many inhabitants are there to a square mile?

77. How many days would a journey from London to Vienna—a distance of 760 miles—take travelling, at the rate of 4 miles an hour for 10 hours in the day?

78. Austria has 39,411,300 people, and 150 people to a square mile of territory; how many square miles does Austria contain?

79. Herschell is 1,800,000,000 miles distant from the earth; how many seconds is his light in reaching the earth, travelling at the rate of 192,000 miles per second?

80. A daily newspaper has an average circulation every day of 34,600; how many copies are sold in the year at this rate?

81. If there are 120 strings in a piano, averaging 3 ft. in length each, how many feet of wire would be needed to put strings into 150 pianos?

82. How many yards of cloth would be needed for the clothing of ten thousand soldiers, if each coat took 1¾ yards, a pair of trousers 1½ yards, and a waistcoat ¾ yard?

83. If a wheel 3 ft. in circumference turns round 60 times a minute, how many feet would a point on the circumference travel in 10 hours?

84. A pair of millstones will grind a bushel in an hour; how many bushels would be ground in a mill having 8 pairs of stones in 6 days of 24 hours each?

85. If a horse eats a peck of corn daily, and a pony half a peck, how many pecks would 6 horses and 4 ponies consume in 2 years?

86. Wire-rope is made at the rate of 20 miles a day by one machine; how many days would it take to make a rope that would reach round the world, the distance being 24,857 miles?

87. How many times does a common clock strike in a year?

## REDUCTION.

Reduce :—

1. £20 8s. 4d. to pence.
2. 16 19 4½ to hf. pence.
3. 14 7 8¾ to farthings.
4. 16 7 0 to shillings.
5. 150 0 8 to pence.
6. 84 7 6½ to hf. pence.
7. 72 3 8¼ to farthings.
8. 91 17 4 to pence.
9. 84 6 8¼ to farthings.
10. 95 11 8½ to hf. pence.
11. 77 19 6¼ to farthings.
12. 84 7 8 to pence.
13. 69 8 3½ to hf. pence.
14. 74 9 8½ to farthings.
15. 121 0 7 to pence.
16. 79 3 8 to farthings.
17. 87 6 4¾ to farthings.
18. 91 6 11 to pence.
19. 54 19 3 to hf. pence.
20. 93 18 7 to farthings.
21. 84 crowns to pence.
22. 91 crowns to sixpences.
23. £84 to half-crowns.
24. 64 crowns to pence.
25. £74 to groats.
26. £91 to sixpences.
27. 179 shillings to pence.
28. £79 to moidores.
29. £84 to threepences.
30. £59 to twopences.
31. 96 shillings to groats.
32. 18 guineas to pence.
33. 14 moidores to pence.
34. 17 nobles to farthings.
35. 120 testers to pence.
36. 190 guineas to farth.
37. 120 marks to pence.
38. 540 groats to farthings.

How many :—

39. pounds in 1867 farth. ?
40. pounds in 960 pence ?
41. pounds in 748 hf.pence ?
42. pounds in 9764d. ?
43. guineas in 97648s. ?
44. gui. in 78598d. ?
45. gui. in 1171776d. ?
46. gui. in 8749 farth. ?
47. gui. in 876489 farth. ?
48. gui. in 976489d. ?
49. gui. in 845643s. ?
50. moidores in 76487d. ?
51. moi. in 87649s. ?
52. moi. in 7684 farth. ?
53. angels in 7648s. ?
54. ang. in 96843d. ?
55. ang. in 76498 farth. ?
56. ang. in 98632 hf. pence.
57. ang. in 56489 farth. ?
58. pounds in 87649 gui. ?
59. gui. in £786,497 ?
60. shillings in £7648 10s. ?
61. pence in 1476 gui. 19s. ?
62. angels in £1,946 10s. ?
63. hf. cr. in 17649 gui. ?
64. moi. in £9,764 10s. ?
65. pence in 5649 gui. 19s ?
66. crowns in 97649 gui. ?
67. threepences in £976 ?
68. groats in 5976 gui. ?
69. hf. pence in 7649 ang. ?
70. threepences in 764 gui. ?
71. crowns in 874 gui. ?
72. moi. in 9764 ang. ?
73. gui. in £564 19s. ?
74. pounds in 764 moi. 19s. ?
75. shillings in 1847 gui. ?
76. crowns in £784 5s. ?

**Reduce :—**

77. 84 lbs. 9 oz. 3 dwts. 5 grs., to grains.
78. 79 oz. 6 dwts. 3 grs., to grains.
79. 84 oz. 6 dwts. 19 grs., to grains.
80. 79 oz. 7 dwts. 14 grs., to grains.
81. 19 lbs. 11 ℥. 7 ʒ. 2 ℈., to grains.
82. 150 lbs. 9 ℥. 4 ʒ. 1 ℈. 19 grs., to grains.
83. 197 lbs. 5 ℥. 6 ʒ. 2 ℈. 14 grs., to grains.
84. 779 lbs. 5 ℥. 3 ʒ., to scruples.
85. 54 c. 7.o. 6 f.℥., to fluid drams.
86. 190 c. 6.o. 3 f.℥. 3 f.ʒ. 50 m., to minims.
87. 50 c. 4.o. 2 f.℥. 2 f.ʒ. 59 m., to minims.
88. 172 c. 7.o. 5 f.℥. 3 f.ʒ. 48 m., to minims.
89. 159 c. 6.o. 6 f.℥. 2 f.ʒ., to fluid drams.
90. 1 ton 16 cwts. 3 qrs. 5 lbs., to ounces.
91. 54 tons 14 cwts. 2 qrs. 5 lbs. 14 oz., to drams.
92. 61 tons 15 cwts. 0 qrs. 19 lbs., to drams.
93. 159 tons 14 cwts. 3 qrs. 27 lbs., to drams.
94. 5 lea. 2 m. 6 fur. 7 po. 4 yds., to feet.
95. 874 m. 5 fur. 3 po. 1 yd. 2 ft. 1 in., to inches.
96. 47 m. 3 fur. 39 po. 5 yds. 2 ft. 11 in., to inches.
97. 54 lea. 2 m. 7 fur. 0 po. 4 yds. 2 ft. 9 in., to inches.
98. 4 yds. 3 qrs. 3 nls., to inches.
99. 5 E. e. 4 qrs. 2 nls. 2 in., to inches.
100. 4 Fl. e. 2 qrs. 2 nls., to nails.
101. 14 Fr. e. 5 qrs. 3 nls. 2 in., to inches.
102. 4 roods 39 po. 30 yds. 8 ft., to feet.
103. 5 acres 3 r. 35 po. 15 yds. 6 ft. 120 in., to inches.
104. 9 acres 5 chains, to links.
105. 5 sq. miles 500 acres 2 r. 38 po., to inches.
106. 590 cubic feet 1,690 in., to inches.
107. 5 tons 26 ft. 169 in. of round timber, to inches.
108. 17 tons 15 ft. 30 in. of round timber, to inches.
109. 20 reams 19 sheets, to sheets.
110. 15 reams 16 qrs. 17 sheets, to sheets.
111. 14 printer's bundles 40 quires, to sheets.
112. 50 reams 9 qrs. 3 sheets, to sheets.
113. 9 hhds. of wine 16 gals. 2 qts. 1 pt., to pints.
114. 1 puncheon 19 gals. 3 qts. 1 pt., to gills.
115. 1 tun 3 hhds. 59 gals. 3 qts., to gills.

116. 960 gals. 3 qts. 1 pt., to pints.
117. 4 quarters 3 bu. 3 pks. 1 gal. 1 qt., to pints.
118. 5 lasts 1 load 4 quarters 7 bushels, to quarts.
119. 18 qrs. 7 bushels 3 pks., to pints.
120. 3 yrs. 19 days, to hours.
121. 1 century 14 yrs. 7 days 9 hours, to seconds.
122. 150 years 74 days 9 hours, to minutes.

Bring:—

123. 18969 pennyweights to pounds.
124. 71847 grains to ounces.
125. 176891 grains to pounds.
126. 7649 scruples to ounces.
127. 79698 grains to apothecaries pounds.
128. 86497 grains to pounds.
129. 87647 minims to fluid ounces.
130. 7865 minims to fluid ounces.
131. 6748 fluid drams to gallons.
132. 8000000 drams to tons.
133. 79643 ounces to cwts.
134. 7649 stones to tons.
135. 9864 inches to furlongs.
136. 159640 yards to leagues.
137. 786493 poles to miles.
138. 196480 inches to French ells.
139. 168 yards to English ells.
140. 4729 nails to yards.
141. 178649 cubic inches to yards.
142. 15764 cubic inches to feet.
143. 15764 cubic feet to tons of shipping.
144. 17647 sheets to reams.
145. 159649 sheets to printer's bundles.
146. 876493 gills of wine to hhds.
147. 54672 pints of wine to tuns.
148. 6749 qts. of wine to puncheons.
149. 197648 pints of beer to hhds.
150. 157621 qts. of beer to butts.
151. 78496 gals. of beer to kilderkins.
152. 67849 pints to pecks.

## COMPOUND ADDITION.

| 1. | | | 2. | | | 3. | | | 4. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| 8 | 9 | 4 | 17 | 3 | 9½ | 20 | 16 | 11¼ | 64 | 17 | 11½ |
| 6 | 3 | 8 | 12 | 4 | 3¼ | 33 | 15 | 9½ | 91 | 13 | 2¾ |
| 7 | 9 | 2 | 19 | 19 | 11½ | 68 | 5 | 10¾ | 76 | 16 | 5¼ |
| 8 | 5 | 4 | 18 | 14 | 6¾ | 74 | 14 | 11½ | 92 | 17 | 11½ |
| 7 | 6 | 8 | 20 | 15 | 11½ | 85 | 15 | 10¼ | 29 | 19 | 8¾ |

| 5. | | | 6. | | | 7. | | | 8. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 99 | 18 | 11¾ | 27 | 16 | 4½ | 79 | 16 | 5¼ | 15 | 19 | 4½ |
| 64 | 16 | 10½ | 36 | 17 | 9¾ | 82 | 17 | 4½ | 17 | 16 | 8¼ |
| 71 | 13 | 2¾ | 58 | 17 | 6¼ | 57 | 9 | 2¾ | 29 | 9 | 10¼ |
| 99 | 17 | 10¼ | 92 | 19 | 8¼ | 69 | 8 | 3¼ | 54 | 7 | 8½ |
| 84 | 16 | 10½ | 27 | 17 | 7¼ | 92 | 8 | 2½ | 92 | 3 | 11¼ |
| 99 | 14 | 11¼ | 54 | 16 | 8¼ | 74 | 9 | 8¾ | 89 | 11 | 6¾ |

| 9. | | | 10. | | | 11. | | | 12. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 74 | 13 | 11½ | 74 | 14 | 8¾ | 79 | 16 | 9¼ | 72 | 11 | 3¼ |
| 85 | 16 | 9¾ | 81 | 12 | 9½ | 87 | 14 | 11¾ | 64 | 19 | 9½ |
| 72 | 17 | 8¼ | 29 | 19 | 8¾ | 97 | 12 | 9¼ | 87 | 14 | 8¾ |
| 29 | 13 | 2½ | 54 | 6 | 7¼ | 84 | 17 | 7¾ | 59 | 19 | 7½ |
| 74 | 16 | 8¾ | 28 | 17 | 8½ | 92 | 12 | 3½ | 64 | 13 | 6½ |
| 29 | 6 | 7½ | 94 | 14 | 7¾ | 54 | 16 | 7¾ | 57 | 17 | 8¾ |
| 34 | 2 | 8½ | 29 | 16 | 9¾ | 28 | 12 | 3¼ | 92 | 13 | 7¼ |

| 13. | | | 14. | | | 15. | | | 16. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 14 | 9¾ | 23 | 16 | 8½ | 58 | 16 | 11½ | 79 | 18 | 6¼ |
| 17 | 15 | 8½ | 54 | 15 | 9¾ | 92 | 13 | 9¾ | 54 | 14 | 11½ |
| 16 | 12 | 11¾ | 91 | 17 | 10½ | 77 | 16 | 8¼ | 71 | 17 | 9¾ |
| 94 | 14 | 9½ | 54 | 16 | 5¾ | 85 | 17 | 8¾ | 64 | 16 | 9½ |
| 86 | 13 | 8½ | 92 | 17 | 8¼ | 92 | 16 | 7½ | 29 | 18 | 7¼ |
| 24 | 15 | 9¾ | 29 | 15 | 9¾ | 99 | 19 | 9¾ | 54 | 16 | 3¼ |
| 29 | 19 | 8¼ | 54 | 11 | 11¼ | 29 | 16 | 4½ | 99 | 19 | 8¼ |

| 17. | | | 18. | | | 19. | | | 20. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 56 | 17 | 2¾ | 23 | 17 | 6¾ | 39 | 18 | 7½ | 37 | 19 | 8¼ |
| 74 | 11 | 10¼ | 54 | 14 | 9½ | 54 | 12 | 11¾ | 57 | 17 | 9¼ |
| 92 | 15 | 8¼ | 29 | 17 | 3½ | 67 | 16 | 8½ | 94 | 14 | 4¾ |
| 37 | 19 | 11½ | 28 | 14 | 11½ | 59 | 14 | 11¼ | 78 | 17 | 6¼ |
| 58 | 16 | 9¾ | 96 | 13 | 2¾ | 63 | 19 | 10¾ | 91 | 15 | 7½ |
| 92 | 15 | 8¼ | 87 | 12 | 11½ | 74 | 17 | 8½ | 84 | 14 | 8¾ |
| 91 | 19 | 8½ | 59 | 13 | 8¼ | 25 | 19 | 9¼ | 27 | 16 | 7¼ |

21.

| £ | s. | d. |
|---|---|---|
| 159 | 16 | 8¼ |
| 124 | 13 | 11½ |
| 156 | 17 | 4¾ |
| 984 | 13 | 8¼ |
| 856 | 16 | 9¾ |
| 859 | 14 | 5¼ |
| 964 | 18 | 9½ |
| 541 | 11 | 10¼ |
| 749 | 19 | 8½ |

22.

| £ | s. | d. |
|---|---|---|
| 174 | 16 | 8 |
| 159 | 13 | 9½ |
| 257 | 9 | 11 |
| 659 | 17 | 3¼ |
| 294 | 13 | 8½ |
| 747 | 12 | 11½ |
| 984 | 12 | 9¾ |
| 858 | 14 | 7¾ |
| 291 | 16 | 10¼ |

23.

| £ | s. | d. |
|---|---|---|
| 194 | 19 | 11¾ |
| 287 | 17 | 10½ |
| 694 | 13 | 11¾ |
| 987 | 15 | 9½ |
| 237 | 14 | 11¾ |
| 990 | 10 | 10½ |
| 896 | 13 | 7¾ |
| 492 | 11 | 8¼ |
| 999 | 19 | 9¾ |

24.

| £ | s. | d. |
|---|---|---|
| 564 | 17 | 11½ |
| 867 | 19 | 10¾ |
| 991 | 18 | 4½ |
| 654 | 17 | 9¼ |
| 285 | 16 | 11½ |
| 195 | 0 | 0¾ |
| 651 | 19 | 10¾ |
| 742 | 14 | 11½ |
| 549 | 17 | 10¾ |

25.

| £ | s. | d. |
|---|---|---|
| 193 | 16 | 11¼ |
| 549 | 18 | 10½ |
| 964 | 17 | 11¾ |
| 648 | 15 | 2½ |
| 329 | 19 | 10¼ |
| 546 | 18 | 9½ |
| 354 | 17 | 8½ |
| 592 | 16 | 8¾ |
| 648 | 14 | 11½ |

26.

| £ | s. | d. |
|---|---|---|
| 695 | 18 | 7½ |
| 592 | 17 | 11¼ |
| 964 | 16 | 8¾ |
| 291 | 19 | 9¾ |
| 854 | 16 | 7¼ |
| 928 | 13 | 8¾ |
| 297 | 15 | 11¼ |
| 968 | 17 | 10¾ |
| 992 | 10 | 11¼ |

27.

| £ | s. | d. |
|---|---|---|
| 758 | 11 | 11¼ |
| 996 | 16 | 7¾ |
| 876 | 16 | 11¼ |
| 274 | 14 | 9¾ |
| 612 | 11 | 8¼ |
| 291 | 13 | 8½ |
| 654 | 12 | 7¼ |
| 291 | 11 | 11¼ |
| 859 | 19 | 9½ |

28.

| £ | s. | d. |
|---|---|---|
| 657 | 19 | 11½ |
| 549 | 14 | 10¾ |
| 654 | 15 | 11½ |
| 754 | 13 | 10¼ |
| 397 | 15 | 8¾ |
| 991 | 10 | 9½ |
| 754 | 16 | 8¾ |
| 291 | 19 | 9¼ |
| 284 | 15 | 7¼ |

29.

| £ | s. | d. |
|---|---|---|
| 391 | 19 | 9¼ |
| 264 | 15 | 10¾ |
| 549 | 16 | 8¾ |
| 791 | 18 | 10½ |
| 354 | 11 | 8¾ |
| 261 | 17 | 5½ |
| 843 | 16 | 2¼ |
| 741 | 13 | 7½ |
| 564 | 15 | 10½ |

30.

| £ | s. | d. |
|---|---|---|
| 549 | 10 | 11½ |
| 672 | 13 | 8¾ |
| 594 | 16 | 7½ |
| 392 | 17 | 8¾ |
| 259 | 18 | 6¾ |
| 964 | 17 | 8½ |
| 594 | 18 | 6¾ |
| 277 | 17 | 8¾ |
| 694 | 18 | 6½ |

31.

| £ | s. | d. |
|---|---|---|
| 964 | 17 | 8¼ |
| 357 | 14 | 11¼ |
| 851 | 19 | 10¾ |
| 769 | 17 | 8¼ |
| 296 | 14 | 11½ |
| 792 | 11 | 3¾ |
| 294 | 19 | 8½ |
| 756 | 15 | 10¼ |
| 991 | 17 | 8¾ |

32.

| £ | s. | d. |
|---|---|---|
| 960 | 17 | 8¼ |
| 391 | 16 | 7½ |
| 254 | 15 | 9¾ |
| 741 | 14 | 8¼ |
| 856 | 15 | 7¾ |
| 829 | 14 | 6¼ |
| 984 | 17 | 7¾ |
| 851 | 16 | 8¼ |
| 298 | 17 | 7¾ |

33.

| £ | s. | d. |
|---|---|---|
| 764 | 13 | 9½ |
| 857 | 18 | 8¼ |
| 691 | 17 | 9¾ |
| 254 | 16 | 5¼ |
| 396 | 18 | 9¾ |
| 259 | 8 | 10½ |
| 392 | 14 | 9¾ |
| 691 | 16 | 8¼ |

34.

| £ | s. | d. |
|---|---|---|
| 554 | 19 | 11¼ |
| 361 | 15 | 10¾ |
| 980 | 13 | 8¼ |
| 291 | 17 | 10¾ |
| 968 | 18 | 9¼ |
| 391 | 14 | 3¾ |
| 264 | 17 | 8¾ |
| 354 | 14 | 8¼ |

35.

| £ | s. | d. |
|---|---|---|
| 991 | 17 | 8¾ |
| 664 | 15 | 8¼ |
| 794 | 14 | 11½ |
| 988 | 17 | 10¾ |
| 284 | 15 | 11¼ |
| 967 | 17 | 10½ |
| 859 | 14 | 9¼ |
| 764 | 17 | 7½ |

36.

| £ | s. | d. |
|---|---|---|
| 854 | 14 | 8¾ |
| 964 | 17 | 10½ |
| 590 | 16 | 11¼ |
| 394 | 17 | 8¾ |
| 289 | 17 | 6¾ |
| 968 | 15 | 10¼ |
| 984 | 14 | 7¼ |
| 589 | 13 | 8½ |

| 37. | | | 38. | | | 39. | | | 40. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| 964 | 17 | 11¾ | 327 | 16 | 8¼ | 991 | 17 | 11½ | 749 | 18 | 11½ |
| 659 | 19 | 8½ | 396 | 14 | 3½ | 547 | 14 | 8¾ | 964 | 17 | 8¾ |
| 856 | 14 | 9½ | 749 | 18 | 2¾ | 964 | 10 | 3¼ | 859 | 17 | 7¼ |
| 879 | 12 | 11¼ | 799 | 17 | 11½ | 596 | 19 | 4½ | 964 | 14 | 8½ |
| 960 | 10 | 8¼ | 654 | 14 | 9½ | 792 | 11 | 8¼ | 847 | 15 | 9¾ |
| 359 | 16 | 3½ | 357 | 17 | 8¾ | 549 | 17 | 6¾ | 864 | 17 | 11½ |
| 964 | 17 | 8¾ | 964 | 15 | 7½ | 568 | 14 | 9½ | 292 | 18 | 8¼ |
| 859 | 14 | 10½ | 749 | 13 | 9¾ | 394 | 16 | 9¾ | 394 | 17 | 7½ |

| 41. | | | 42. | | | 43. | | | 44. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 794 | 16 | 3¾ | 964 | 17 | 7¾ | 391 | 14 | 8¾ | 764 | 3 | 11¼ |
| 964 | 17 | 8½ | 647 | 14 | 9½ | 694 | 17 | 7½ | 697 | 17 | 10½ |
| 599 | 18 | 6¾ | 391 | 15 | 9½ | 961 | 15 | 5¼ | 541 | 14 | 11¾ |
| 694 | 17 | 8¼ | 747 | 16 | 8¼ | 384 | 17 | 8¾ | 792 | 13 | 10 |
| 291 | 18 | 7½ | 391 | 17 | 9½ | 359 | 18 | 8½ | 847 | 17 | 8¼ |
| 394 | 17 | 8½ | 284 | 17 | 7½ | 560 | 10 | 10¼ | 392 | 19 | 7½ |
| 968 | 17 | 9¼ | 354 | 16 | 5¼ | 389 | 5 | 11¼ | 549 | 17 | 8¼ |
| 381 | 16 | 7¾ | 291 | 13 | 8¾ | 264 | 11 | 11¾ | 694 | 13 | 6½ |
| 349 | 14 | 8¼ | 356 | 14 | 7½ | 749 | 10 | 10¼ | 541 | 15 | 8¾ |

| 45. | | | 46. | | | 47. | | | 48. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 764 | 17 | 11½ | 547 | 13 | 11½ | 964 | 18 | 7¼ | 647 | 17 | 11¼ |
| 348 | 14 | 3¼ | 747 | 18 | 9¾ | 369 | 17 | 8¾ | 964 | 18 | 2¾ |
| 964 | 17 | 7½ | 657 | 17 | 9¼ | 968 | 18 | 10¼ | 542 | 14 | 10½ |
| 294 | 3 | 3¼ | 347 | 18 | 2¼ | 391 | 19 | 10¾ | 793 | 19 | 11¾ |
| 647 | 14 | 7¼ | 549 | 19 | 8¾ | 546 | 17 | 11¼ | 654 | 14 | 2½ |
| 964 | 17 | 11½ | 647 | 17 | 11½ | 649 | 13 | 10¼ | 396 | 16 | 8¾ |
| 347 | 14 | 9¾ | 349 | 18 | 7½ | 391 | 15 | 8¾ | 294 | 15 | 9½ |
| 694 | 18 | 2¼ | 648 | 14 | 3¾ | 264 | 17 | 7½ | 391 | 19 | 9¼ |
| 391 | 16 | 9½ | 964 | 18 | 5¾ | 861 | 16 | 2½ | 654 | 17 | 10 |

| 49. | | | 50. | | | 51. | | | 52. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 964 | 17 | 4½ | 964 | 17 | 7½ | 748 | 14 | 11½ | 947 | 16 | 8¾ |
| 391 | 16 | 8¼ | 549 | 13 | 8¾ | 644 | 10 | 8¾ | 597 | 17 | 4½ |
| 598 | 14 | 3½ | 691 | 19 | 11½ | 751 | 19 | 8¼ | 846 | 16 | 7¼ |
| 648 | 17 | 8 | 594 | 14 | 10¼ | 198 | 16 | 7¾ | 964 | 13 | 8¼ |
| 961 | 14 | 7¾ | 763 | 17 | 11¾ | 961 | 19 | 8¼ | 849 | 19 | 9¾ |
| 598 | 17 | 3½ | 964 | 8 | 2¾ | 858 | 17 | 11½ | 684 | 14 | 8¼ |
| 694 | 14 | 11½ | 859 | 6 | 4½ | 394 | 15 | 8¼ | 939 | 19 | 8½ |
| 357 | 17 | 9¼ | 538 | 3 | 2¼ | 692 | 19 | 9¾ | 654 | 17 | 7¾ |
| 658 | 9 | 8 | 991 | 9 | 9 | 541 | 18 | 4¾ | 961 | 19 | 9¼ |

### TROY WEIGHT.

| 53. | | | 54. | | | 55. | | | 56. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| oz. | dwts. | grs. | lbs. | oz. | dwts. | oz. | dwts. | grs. | lbs. | oz. | dwts. |
| 150 | 18 | 16 | 164 | 11 | 19 | 364 | 19 | 23 | 564 | 5 | 11 |
| 139 | 15 | 12 | 192 | 10 | 16 | 968 | 8 | 7 | 699 | 11 | 19 |
| 174 | 13 | 18 | 964 | 10 | 18 | 859 | 14 | 11 | 347 | 8 | 14 |
| 297 | 19 | 23 | 840 | 8 | 15 | 391 | 17 | 10 | 369 | 10 | 18 |
| 849 | 12 | 22 | 984 | 5 | 14 | 564 | 18 | 22 | 549 | 11 | 19 |
| 964 | 11 | 21 | 849 | 11 | 13 | 391 | 17 | 15 | 692 | 3 | 14 |

### APOTHECARIES' WEIGHT.

| 57. | | | 58. | | | 59. | | | 60. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ʒ | ℈ | gr. | ℥ | ʒ | ℈ | lb. | ℥ | ʒ | ℥ | ʒ | ℈ |
| 164 | 2 | 19 | 794 | 7 | 2 | 364 | 11 | 7 | 549 | 7 | 2 |
| 179 | 1 | 16 | 632 | 6 | 1 | 597 | 10 | 6 | 747 | 6 | 1 |
| 184 | 2 | 13 | 549 | 5 | 2 | 792 | 3 | 4 | 394 | 5 | 2 |
| 968 | 1 | 18 | 391 | 6 | 1 | 897 | 5 | 4 | 949 | 3 | 0 |
| 594 | 2 | 13 | 594 | 2 | 0 | 398 | 8 | 5 | 749 | 5 | 1 |
| 790 | 0 | 15 | 864 | 7 | 1 | 699 | 7 | 5 | 648 | 3 | 2 |

### APOTHECARIES' FLUID MEASURE.

| 61. | | | 62. | | | 63. | | | 64. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| F℥ | Fʒ | M | O | F℥ | Fʒ | C | O | F℥ | C | O | F℥ |
| 359 | 7 | 59 | 564 | 19 | 7 | 364 | 7 | 19 | 596 | 6 | 14 |
| 654 | 6 | 48 | 367 | 18 | 6 | 591 | 6 | 14 | 394 | 4 | 10 |
| 391 | 7 | 58 | 549 | 13 | 4 | 374 | 5 | 11 | 974 | 5 | 12 |
| 596 | 5 | 37 | 692 | 17 | 6 | 591 | 6 | 18 | 823 | 4 | 11 |
| 648 | 3 | 29 | 547 | 13 | 7 | 359 | 4 | 14 | 792 | 3 | 12 |
| 568 | 7 | 37 | 674 | 12 | 5 | 792 | 5 | 17 | 597 | 6 | 11 |

### AVOIRDUPOIS WEIGHT.

| 65. | | | 66. | | | 67. | | | 68. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| lbs. | oz. | drs. | qrs. | lbs. | oz. | cwts. | qrs. | lbs. | tons. | cwts. | qrs. |
| 794 | 15 | 15 | 794 | 27 | 15 | 964 | 3 | 27 | 749 | 19 | 3 |
| 392 | 12 | 10 | 391 | 25 | 14 | 351 | 2 | 19 | 654 | 18 | 1 |
| 741 | 11 | 9 | 584 | 23 | 12 | 598 | 1 | 18 | 992 | 13 | 3 |
| 654 | 13 | 12 | 968 | 14 | 9 | 659 | 3 | 25 | 757 | 12 | 0 |
| 781 | 5 | 6 | 357 | 11 | 10 | 958 | 1 | 24 | 592 | 11 | 3 |
| 854 | 14 | 11 | 567 | 18 | 11 | 647 | 2 | 26 | 888 | 18 | 2 |

### LONG MEASURE.

| 69. | | | 70. | | | 71. | | | 72. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| yds. | ft. | in. | po. | yds. | ft. | fur. | po. | yds. | miles. | fur. | po. |
| 794 | 2 | 11 | 474 | 5 | 2 | 874 | 39 | 5 | 754 | 3 | 39 |
| 596 | 1 | 9 | 791 | 4 | 1 | 396 | 27 | 3 | 658 | 2 | 28 |
| 354 | 2 | 7 | 654 | 2 | 2 | 964 | 30 | 4 | 354 | 5 | 37 |
| 932 | 1 | 10 | 972 | 3 | 1 | 889 | 37 | 4 | 694 | 6 | 29 |
| 547 | 2 | 9 | 596 | 4 | 2 | 968 | 29 | 3 | 593 | 3 | 37 |
| 172 | 1 | 8 | 391 | 3 | 1 | 597 | 30 | 4 | 274 | 2 | 21 |

### CLOTH MEASURE.

| 73. | | | 74. | | | 75. | | | 76. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| yds. | qrs. | nls. | Fl. e. | qrs. | nls. | E. e. | qrs. | nls. | Fr. e. | qrs. | nls. |
| 764 | 3 | 3 | 960 | 0 | 3 | 794 | 4 | 3 | 764 | 5 | 3 |
| 859 | 2 | 1 | 857 | 2 | 1 | 365 | 2 | 1 | 892 | 3 | 2 |
| 982 | 3 | 2 | 964 | 0 | 2 | 950 | 3 | 2 | 156 | 4 | 1 |
| 874 | 1 | 3 | 859 | 2 | 2 | 874 | 3 | 1 | 764 | 5 | 0 |
| 964 | 2 | 1 | 978 | 0 | 1 | 978 | 4 | 3 | 976 | 3 | 1 |
| 870 | 2 | 2 | 864 | 0 | 3 | 859 | 3 | 2 | 658 | 2 | 2 |

### SQUARE MEASURE.

| 77. | | | 78. | | | 79. | | | 80. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| yds. | ft. | in. | po. | yds. | ft. | roods. | po. | yds. | acres. | roods. | po. |
| 72 | 8 | 143 | 778 | 30 | 8 | 764 | 39 | 30 | 749 | 3 | 39 |
| 86 | 7 | 128 | 840 | 27 | 6 | 891 | 27 | 19 | 372 | 2 | 27 |
| 37 | 4 | 136 | 594 | 29 | 3 | 547 | 28 | 12 | 647 | 1 | 37 |
| 29 | 3 | 142 | 876 | 30 | 7 | 747 | 36 | 29 | 549 | 2 | 36 |
| 79 | 8 | 126 | 597 | 18 | 6 | 548 | 24 | 30 | 648 | 1 | 37 |
| 84 | 6 | 115 | 394 | 12 | 7 | 764 | 38 | 27 | 548 | 2 | 36 |

### CUBIC OR SOLID MEASURE.

| 81. | | | 82. | | | 83. | | | 84. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| yds. | ft. | in. | yds. | ft. | in. | loads of round timber. | ft. | in. | tons of shipng. | ft. | in. |
| 9 | 26 | 1727 | 8 | 25 | 1649 | 729 | 26 | 1724 | 37 | 41 | 1720 |
| 8 | 21 | 1642 | 3 | 22 | 1374 | 342 | 39 | 1642 | 42 | 39 | 640 |
| 7 | 22 | 1504 | 2 | 19 | 1493 | 374 | 37 | 1472 | 28 | 17 | 590 |
| 8 | 13 | 1307 | 1 | 12 | 1643 | 359 | 34 | 1674 | 34 | 14 | 164 |
| 7 | 12 | 1260 | 2 | 26 | 1726 | 598 | 17 | 1479 | 74 | 13 | 251 |
| 6 | 14 | 1379 | 1 | 14 | 1637 | 392 | 12 | 1264 | 94 | 12 | 758 |

## WINE MEASURE.

| 85. | | | 86. | | | 87. | | | 88. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| qts. | pts. | gills. | pipes | hhds. | gals. | pun. | gals. | qts. | tuns | pipes | gals. |
| 746 | 1 | 3 | 749 | 1 | 62 | 762 | 83 | 1 | 73 | 1 | 125 |
| 894 | 0 | 2 | 354 | 0 | 61 | 599 | 73 | 1 | 58 | 0 | 110 |
| 976 | 1 | 1 | 764 | 1 | 29 | 264 | 71 | 0 | 64 | 1 | 118 |
| 849 | 0 | 2 | 304 | 0 | 60 | 879 | 28 | 0 | 79 | 0 | 120 |
| 764 | 1 | 3 | 792 | 1 | 32 | 968 | 34 | 1 | 78 | 1 | 116 |
| 954 | 0 | 2 | 547 | 0 | 28 | 792 | 81 | 0 | 59 | 1 | 114 |

## ALE AND BEER MEASURE.

| 89. | | | 90. | | | 91. | | | 92. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| firk. | gals. | qts. | kil. | firk. | gals. | hhds. | kil. | gals. | butts | kil. | fir. |
| 749 | 8 | 3 | 762 | 1 | 8 | 796 | 2 | 17 | 968 | 5 | 1 |
| 654 | 7 | 2 | 359 | 1 | 7 | 844 | 1 | 16 | 351 | 4 | 1 |
| 989 | 6 | 1 | 258 | 1 | 6 | 394 | 2 | 14 | 962 | 3 | 0 |
| 843 | 5 | 2 | 759 | 0 | 3 | 998 | 1 | 15 | 847 | 2 | 1 |
| 792 | 3 | 3 | 964 | 1 | 2 | 387 | 1 | 17 | 982 | 1 | 1 |
| 864 | 7 | 2 | 374 | 1 | 7 | 294 | 2 | 12 | 747 | 2 | 0 |

## DRY MEASURE.

| 93. | | | 94. | | | 95. | | | 96. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| pks. | gals. | qts. | bu. | pks. | gals. | qrs. | bu. | pks. | lasts | loads | qrs. |
| 792 | 1 | 3 | 869 | 3 | 1 | 156 | 7 | 3 | 764 | 1 | 4 |
| 834 | 1 | 2 | 347 | 1 | 1 | 792 | 6 | 2 | 887 | 1 | 3 |
| 659 | 1 | 3 | 547 | 2 | 0 | 843 | 5 | 1 | 744 | 1 | 2 |
| 847 | 1 | 2 | 394 | 3 | 1 | 992 | 4 | 2 | 958 | 1 | 3 |
| 973 | 0 | 1 | 647 | 2 | 1 | 843 | 6 | 3 | 764 | 0 | 2 |
| 549 | 1 | 2 | 549 | 1 | 1 | 197 | 5 | 2 | 543 | 1 | 1 |

## TIME.

| 97. | | | 98. | | | 99. | | | 100. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| hrs. | min. | sec. | wks. | days | hrs. | yrs. | days | hrs. | days | hrs. | min. |
| 768 | 59 | 59 | 747 | 6 | 23 | 27 | 365 | 23 | 56 | 23 | 59 |
| 354 | 57 | 32 | 652 | 1 | 21 | 34 | $251\frac{1}{4}$ | 21 | 74 | 21 | 37 |
| 972 | 29 | 56 | 777 | 5 | 22 | 57 | $150\frac{1}{2}$ | 13 | 25 | 20 | 39 |
| 543 | 27 | 39 | 846 | 4 | 17 | 64 | $120\frac{1}{4}$ | 23 | 87 | 19 | 58 |
| 164 | 54 | 29 | 968 | 3 | 14 | 72 | $251\frac{1}{4}$ | 19 | 64 | 13 | 52 |
| 167 | 39 | 28 | 291 | 5 | 19 | 64 | 174 | 13 | 29 | 12 | 28 |

| | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 101. | 720 | 19 | 6 | +849 | 3 | 4 | +321 | 4 | 2½ | +176 | 14 | 9¾ + |
| | 928 | 17 | 4½ | +421 | 9 | 8¾ | +644 | 17 | 8¼ | +752 | 16 | 9¼ + |
| | 854 | 14 | 11¼ | +938 | 17 | 9¼ | +856 | 16 | 11½ | +851 | 14 | 9¾ |
| 102. | 654 | 19 | 8½ | +327 | 14 | 11½ | +638 | 14 | 10¼ | +967 | 17 | 8½ + |
| | 954 | 17 | 7½ | +329 | 16 | 10¼ | +737 | 18 | 11¼ | +937 | 18 | 7¼ + |
| | 847 | 19 | 8¾ | +572 | 17 | 8½ | +815 | 17 | 10½ | +864 | 19 | 11¾ |
| 103. | 597 | 8 | 10½ | +964 | 10 | 7¾ | +213 | 10 | 9¾ | +647 | 18 | 7½ + |
| | 564 | 18 | 9¾ | +743 | 11 | 8½ | +114 | 8 | 10½ | +754 | 16 | 10¼ + |
| | 659 | 17 | 11½ | +962 | 9 | 7¼ | +847 | 16 | 7¼ | +672 | 14 | 9¾ |
| 104. | 934 | 8 | 7¼ | +869 | 7 | 4½ | +329 | 8 | 8½ | +649 | 17 | 9¼ + |
| | 321 | 9 | 8½ | +644 | 18 | 11¾ | +596 | 16 | 8¾ | +324 | 14 | 8½ + |
| | 591 | 17 | 11¼ | +692 | 17 | 10¼ | +694 | 14 | 8½ | +375 | 16 | 9¾ |
| 105. | 394 | 16 | 7½ | +598 | 14 | 10¾ | +754 | 13 | 8½ | +928 | 17 | 5¼ + |
| | 564 | 17 | 7¾ | +692 | 19 | 10¼ | +568 | 10 | 9½ | +690 | 10 | 1¾ + |
| | 754 | 18 | 11½ | +701 | 9 | 3¼ | +608 | 3 | 2¼ | +964 | 7 | 3½ |
| 106. | 841 | 17 | 4½ | +854 | 9 | 8¼ | +508 | 14 | 9¾ | +758 | 14 | 10¾ + |
| | 956 | 8 | 7¾ | +741 | 18 | 11¾ | +970 | 10 | 8¼ | +644 | 9 | 8¼ + |
| | 392 | 17 | 10¼ | +859 | 16 | 8¼ | +544 | 8 | 7¾ | +928 | 7 | 10¾ |
| 107. | 745 | 10 | 9½ | +907 | 14 | 9¾ | +594 | 16 | 10¼ | +829 | 18 | 9¼ |
| | 634 | 18 | 7¾ | +567 | 9 | 10½ | +327 | 8 | 7¾ | +964 | 17 | 10¾ + |
| | 542 | 17 | 10¼ | +786 | 10 | 9¾ | +968 | 17 | 8¼ | +594 | 14 | 4¼ |
| 108. | 391 | 10 | 11¼ | +859 | 17 | 7¼ | +964 | 18 | 5¾ | +564 | 16 | 8½ + |
| | 596 | 18 | 10¾ | +647 | 16 | 9½ | +594 | 14 | 7¼ | +968 | 17 | 9¾ + |
| | 598 | 14 | 9¼ | +329 | 17 | 8¼ | +647 | 16 | 8½ | +729 | 8 | 8¼ |
| 109. | 744 | 3 | 11½ | +264 | 3 | 9¼ | +542 | 12 | 11½ | +647 | 3 | 9¼ + |
| | 964 | 12 | 10¼ | +396 | 12 | 8½ | +647 | 10 | 9¾ | +546 | 19 | 8½ + |
| | 742 | 13 | 11¾ | +964 | 19 | 9¾ | +847 | 16 | 8½ | +992 | 17 | 3¾ |
| 110. | 874 | 11 | 10¼ | +364 | 17 | 8½ | +996 | 13 | 9¼ | +647 | 11 | 3½ + |
| | 547 | 14 | 3¾ | +647 | 12 | 9¼ | +859 | 11 | 3¾ | +792 | 19 | 8 + |
| | 678 | 12 | 9½ | +349 | 13 | 8¼ | +964 | 17 | 8¾ | +998 | 12 | 11¼ |
| 111. | 764 | 11 | 8¼ | +768 | 11 | 3¾ | +768 | 15 | 11¾ | +392 | 10 | 10½ + |
| | 549 | 12 | 11¼ | +394 | 19 | 9¼ | +876 | 12 | 10 | +964 | 11 | 3 + |
| | 973 | 5 | 10½ | +692 | 18 | 4¾ | +678 | 11 | 3¼ | +549 | 10 | 8 |
| 112. | 876 | 14 | 11¾ | +372 | 19 | 11½ | +596 | 13 | 11¼ | +364 | 10 | 8½ + |
| | 564 | 3 | 3 | +864 | 17 | 8¼ | +964 | 11 | 10 | +378 | 9 | 9 + |
| | 964 | 18 | 10½ | +991 | 13 | 7½ | +847 | 8 | 3 | +879 | 19 | 8 |
| 113. | 564 | 17 | 8¼ | +998 | 12 | 10¾ | +968 | 17 | 4¼ | +964 | 16 | 8¼ + |
| | 394 | 15 | 7¾ | +928 | 11 | 10¼ | +929 | 13 | 11½ | +846 | 17 | 9½ + |
| | 592 | 13 | 8¼ | +592 | 10 | 8¾ | +856 | 12 | 9½ | +964 | 13 | 8 |

114. 18 lbs. 11 oz. 19 dwts. 23 grs. + 5 oz. 14 dwts. 9 grs. + 14 dwts. 20 grs. + 10 oz. 13 dwts. 20 grs. + 5 oz. 16 dwts. 22 grs. + 116 lbs. 2 oz. 18 dwts. 22 grs. + 16 dwts. 14 grs. + 17 dwts. 19 grs. + 18 lbs. 3 oz. 2 dwts.

115. 150 lbs. 7℥ 7ʒ 2℈ 14 grs. + 11℥ 5ʒ 1℈ 11 grs + 2ʒ 1℈ 1 gr. + 124 lbs. 3℥ 5ʒ 1℈ 15 grs + 4ʒ + 3℈ 12 gr. + 2ʒ 2℈ 19 gr. + 1℥ 7ʒ 2℈ 3 gr. + 147 lbs. 11℥ 2ʒ 1℈ 14 grs + 5℥ 2ʒ 1℈ 5 grs

116. 150 tons 12 cwts. 3 qrs. 27 lbs. 5 oz. 14 dr. + 15 cwts. 2 qrs. 19 lbs. 5 oz. 3 dr. + 22 lbs. 12 oz. 15 dr. + 14 oz. 13 dr. + 19 tons 18 cwts. 2 qrs. 15 lbs. 11 oz. 14 dr. + 16 cwts. 1 qr. 20 lbs. 14 oz. 3 dr. + 11 oz. 12 dr.

117. 174 miles 7 fur. 39 po. 4 yds. 2 ft. 11 in. + 14 po. 2 yds. 1 ft. 6 in. + 4 yds. 2 ft. 11 in. + 1694 m. 6 fur. 24 po. 2 yds. 2 ft. 9 in. + 3 yds. 2 ft. 9 in + 1 ft. 4 in. + 29 po. 2 yds. 1 ft. 11 in.

118. 564 yds. 3 qrs. 2 nls. 1¼ in. + 729 yds. 2 qrs. 1 nl. 1¼ in. + 2 qrs. 2 nls. 1½ in. + 3 nls. 2 in. + 764 yds. 3 qrs. 2 nls. 2 in. + 764 yds. 1 qr. 3 nls. 2 in. + 2 nls. 1 in. + 1,849 yds. 2 qrs. 1 nl. 1 in.

119. 76 acres 9 sq. ch. 9000 sq. links + 848 sq. miles 639 acres 8 sq. ch. 8000 sq. links + 9647 sq. miles 527 acres 7 sq. ch. 8764 sq. links + 1597 sq. miles 597 acres 7 sq. ch. 9672 sq. links.

120. 764 puncheons 59 gals. 3 qts. 1 pt. + 1592 pun. 83 gals. 2 qts. 1 pt. + 1692 pun. 82 gals. 2 qts. 1 pt. + 74 gals. 1 qt. 1 pt. + 297 pun. 82 gals. 3 qts. 1 pt. + 764 pun. 79 gals. 2 qts. 0 pts. + 1692 pun. 57 gals. 2 qts. 1 pt. + 9 gals. 3 qts. 1 pt. + 72 pun. 81 gals. 2 qts. 1 pt.

121. 276 hhds. of beer 29 gals. 2 qts. 1 pt. + 597 hhds. 53 gals. 3 qts. 1 pt. + 792 hhds. 36 gals. 2 qts. 0 pt. + 39 gals. 1 qt. 1 pt. + 52 gals. 2 qts. 1 pt. + 842 hhds. 25 gals. 1 qt. 1 pt. + 51 gals. 3 qts. 1 pt. + 2 qts. 1 pt.

122. 747 loads 4 qrs. 7 bu. 3 pks. 1 gal. 3 qts. 1 pt. + 4 qrs. 5 bu. 2 pks. 0 gals. 2 qts. 0 pts. + 849 loads 3 qrs. 7 bu. 2 pks. 1 gal. 2 qts. 1 pt. + 654 loads 3 qrs. 4 bu. 2 pks. 1 gal. 2 qts. 1 pt. + 754 loads 2 qrs. 3 bu. 1 pk. 1 gal. 2 qts. 0 pts.

NOTE.—The following columns of compound numbers will afford 1,684 different additions of three lines or upwards in length, by commencing at any line and continuing to any other line at will. The lines are marked A, B, &c., that they may be readily distinguished.

| | 123. | | | 124. | | | 125. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | £ | s. | d. | £ | s. | d. | tons | cwt. | qrs | lbs. | oz. | drs. | |
| A | 74 | 19 | 11¼ | 97 | 14 | 11¾ | 5 | 19 | 2 | 27 | 15 | 15 | A |
| B | 69 | 12 | 10¾ | 78 | 12 | 10½ | 7 | 13 | 1 | 24 | 5 | 4 | B |
| C | 84 | 17 | 11½ | 34 | 14 | 9¾ | 6 | 11 | 3 | 19 | 8 | 9 | C |
| D | 39 | 10 | 8¼ | 92 | 17 | 6½ | 9 | 14 | 1 | 16 | 6 | 3 | D |
| E | 67 | 15 | 9¾ | 54 | 13 | 7¾ | 2 | 12 | 2 | 15 | 9 | 8 | E |
| F | 27 | 16 | 10½ | 92 | 16 | 8½ | 8 | 9 | 3 | 12 | 2 | 4 | F |
| G | 34 | 14 | 10¾ | 54 | 14 | 9¾ | 3 | 11 | 3 | 17 | 13 | 6 | G |
| H | 99 | 19 | 9½ | 72 | 16 | 11½ | 7 | 8 | 2 | 23 | 7 | 12 | H |
| I | 78 | 15 | 2¼ | 59 | 13 | 10¼ | 4 | 12 | 1 | 14 | 15 | 11 | I |
| J | 64 | 13 | 9 | 37 | 19 | 11½ | 6 | 7 | 2 | 21 | 14 | 2 | J |
| K | 58 | 15 | 7¾ | 98 | 14 | 7¼ | 5 | 13 | 3 | 15 | 9 | 13 | K |
| L | 99 | 17 | 11½ | 34 | 16 | 8¼ | 5 | 6 | 1 | 22 | 7 | 9 | L |
| M | 34 | 16 | 8¼ | 97 | 18 | 11¾ | 6 | 14 | 3 | 16 | 2 | 14 | M |
| N | 29 | 19 | 11¼ | 34 | 17 | 10¼ | 4 | 5 | 1 | 23 | 5 | 2 | N |
| O | 34 | 14 | 8½ | 39 | 13 | 3½ | 7 | 15 | 2 | 17 | 12 | 1 | O |
| P | 59 | 16 | 7¾ | 93 | 7 | 5¼ | 3 | 4 | 1 | 24 | 13 | 13 | P |
| Q | 64 | 18 | 8½ | 84 | 15 | 8½ | 8 | 16 | 3 | 18 | 14 | 12 | Q |
| R | 99 | 19 | 11¼ | 99 | 19 | 9¾ | 2 | 3 | 2 | 25 | 7 | 11 | R |
| S | 74 | 14 | 10¾ | 89 | 18 | 11½ | 9 | 17 | 0 | 19 | 9 | 10 | S |
| T | 92 | 11 | 7½ | 64 | 17 | 10¼ | 1 | 2 | 3 | 26 | 12 | 9 | T |
| U | 76 | 16 | 9¾ | 38 | 16 | 11¼ | 0 | 18 | 0 | 20 | 2 | 8 | U |
| V | 24 | 14 | 10 | 35 | 14 | 8½ | 8 | 1 | 1 | 27 | 1 | 7 | V |
| W | 92 | 13 | 9¼ | 79 | 16 | 3½ | 1 | 19 | 2 | 21 | 9 | 6 | W |
| X | 59 | 17 | 7½ | 84 | 15 | 2¾ | 9 | 0 | 0 | 2 | 8 | 5 | X |
| Y | 34 | 16 | 6¾ | 92 | 11 | 6¼ | 2 | 18 | 3 | 22 | 11 | 4 | Y |
| Z | 92 | 15 | 7½ | 87 | 13 | 8¾ | 8 | 2 | 0 | 3 | 15 | 3 | Z |
| 2 A | 27 | 12 | 8¼ | 92 | 12 | 9¼ | 3 | 17 | 1 | 23 | 14 | 2 | 2 A |
| 2 B | 34 | 17 | 7¼ | 34 | 16 | 8¾ | 7 | 3 | 2 | 4 | 6 | 1 | 2 B |
| 2 C | 92 | 11 | 4¾ | 59 | 19 | 9½ | 4 | 16 | 0 | 24 | 8 | 2 | 2 C |
| 2 D | 69 | 13 | 7½ | 64 | 13 | 11¼ | 6 | 4 | 3 | 5 | 9 | 13 | 2 D |
| 2 E | 54 | 17 | 8¾ | 92 | 18 | 4¼ | 5 | 15 | 2 | 25 | 12 | 14 | 2 E |
| 2 F | 92 | 11 | 9¼ | 67 | 8 | 5½ | 5 | 5 | 0 | 6 | 9 | 15 | 2 F |
| 2 G | 34 | 15 | 6¾ | 79 | 5 | 6¼ | 6 | 14 | 1 | 26 | 3 | 14 | 2 G |
| 2 H | 59 | 19 | 11¾ | 87 | 14 | 11¾ | 4 | 6 | 2 | 27 | 11 | 13 | 2 H |

## COMPOUND SUBTRACTION.

| | 1. | | | 2. | | | 3. | | | 4. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| 820 | 12 | 6 | 911 | 17 | 4 | 174 | 14 | 6 | 747 | 15 | 3 |
| 147 | 13 | 2 | 647 | 12 | 3 | 159 | 19 | 11 | 697 | 19 | 8 |
| | 5. | | | 6. | | | 7. | | | 8. | |
| 967 | 14 | 11 | 747 | 13 | 8 | 174 | 13 | 2 | 768 | 12 | 3 |
| 872 | 19 | 8 | 299 | 18 | 10 | 169 | 18 | 9 | 159 | 15 | 9 |
| | 9. | | | 10. | | | 11. | | | 12. | |
| 176 | 19 | 11¼ | 564 | 17 | 9½ | 868 | 15 | 6½ | 927 | 14 | 10 |
| 169 | 14 | 10¾ | 324 | 19 | 8¾ | 741 | 19 | 11¼ | 728 | 16 | 11¼ |
| | 13. | | | 14. | | | 15. | | | 16. | |
| 764 | 17 | 9¾ | 354 | 14 | 8½ | 769 | 10 | 8½ | 297 | 15 | 8½ |
| 299 | 19 | 11¼ | 297 | 18 | 10¾ | 344 | 15 | 11¼ | 199 | 19 | 9¼ |
| | 17. | | | 18. | | | 19. | | | 20. | |
| 364 | 13 | 8½ | 749 | 15 | 8¼ | 827 | 11 | 5½ | 198 | 17 | 3¼ |
| 296 | 17 | 11¾ | 158 | 14 | 9½ | 735 | 15 | 8¼ | 127 | 16 | 11¾ |
| | 21. | | | 22. | | | 23. | | | 24. | |
| 658 | 11 | 3½ | 749 | 2 | 6¼ | 347 | 14 | 11½ | 158 | 15 | 8¼ |
| 198 | 13 | 8¼ | 127 | 19 | 11½ | 259 | 10 | 8¼ | 129 | 12 | 7¼ |
| | 25. | | | 26. | | | 27. | | | 28. | |
| 864 | 17 | 11½ | 196 | 13 | 2¼ | 264 | 19 | 3¾ | 168 | 17 | 8¾ |
| 648 | 14 | 10½ | 187 | 12 | 11¾ | 159 | 14 | 9½ | 129 | 15 | 11¼ |
| | 29. | | | 30. | | | 31. | | | 32. | |
| 174 | 14 | 8¼ | 178 | 13 | 2½ | 898 | 15 | 11¼ | 864 | 13 | 9¾ |
| 169 | 13 | 11½ | 157 | 12 | 11¾ | 822 | 19 | 11½ | 159 | 15 | 11½ |
| | 33. | | | 34. | | | 35. | | | 36. | |
| 174 | 15 | 8½ | 274 | 14 | 8¾ | 764 | 19 | 8¼ | 234 | 12 | 8¼ |
| 129 | 19 | 11¾ | 192 | 15 | 11¼ | 129 | 15 | 11½ | 157 | 14 | 10¾ |
| | 37. | | | 38. | | | 39. | | | 40. | |
| 169 | 19 | 10¼ | 128 | 13 | 5½ | 564 | 15 | 11¼ | 874 | 16 | 4¾ |
| 158 | 19 | 11½ | 119 | 15 | 11½ | 398 | 19 | 10¾ | 598 | 15 | 11¾ |
| | 41. | | | 42. | | | 43. | | | 44. | |
| 746 | 3 | 9¾ | 647 | 19 | 2¾ | 764 | 15 | 10½ | 154 | 19 | 8¾ |
| 198 | 15 | 11½ | 158 | 14 | 11¼ | 132 | 16 | 11¾ | 129 | 16 | 11½ |
| | 45. | | | 46. | | | 47. | | | 48. | |
| 154 | 15 | 6½ | 331 | 12 | 10¼ | 156 | 11 | 8¾ | 396 | 12 | 11¼ |
| 138 | 19 | 11½ | 129 | 19 | 8¾ | 139 | 12 | 11¼ | 199 | 15 | 11¾ |

£ s. d. £ s. d.
49. 84 7 9¾—72 11 5¾
50. 92 15 11½—39 19 10¾
51. 56 15 10¼—52 19 11¼
52. 98 12 9¾—29 15 10¼
53. 84 15 10½—36 19 11¾
54. 73 14 11¼—39 15 8½
55. 97 16 8¾—57 19 10¾
56. 86 13 11½—58 15 11¼
57. 17 16 8¼—14 13 9½
58. 15 15 5½—14 19 8¾
59. 39 18 7¼—28 17 11½
60. 48 11 6¾—39 10 8¼

£ s. d. £ s. d.
61. 27 14 11¼—26 15 11½
62. 98 13 8¾—96 17 8¼
63. 84 15 9¼—37 15 10½
64. 79 16 10½—72 19 11¼
65. 87 15 9¾—79 16 8¼
66. 94 17 10 —91 19 11
67. 33 19 11¼—28 1 2½
68. 79 18 10½—54 3 11¾
69. 82 12 9¾—79 5 10¼
70. 15 oz. 16 dwts.—19 dwts. 23 grs.
71. 17 dwts. 23 grs.—16 dwts. 19 grs.
72. 2 oz. 14 dwts.—1 oz. 17 dwts.

73. 157 lbs. 8 oz. 19 dwts. 20 grs.—11 oz. 19 dwts. 22 grs.
74. 7 lbs. 9 oz. 8 dwts. 5 grs.—6 lbs. 10 oz. 9 dwts. 9 grs.
75. 150 lbs. 11 ℥. 6 ʒ. 2 ℈.—97 lbs. 11 ℥. 7 ʒ. 2 ℈.
76. 5 lbs. 7 ℥. 3 ʒ. 1 ℈. 8 grs.—1 lb. 9 ℥. 7 ʒ. 2 ℈. 9 grs.
77. 19 F ℥. 6 F ʒ. 14 m.—17 F ℥. 7 F ʒ. 59 m.
78. 8 C. 7 O. 10 F ℥. 1 F ʒ.—1 C. 7 O. 19 F ℥. 7 F ℥.
79. 8 tons 3 cwts. 2 qrs. 5 lbs.—5 tons 8 cwt. 3 qrs. 9 lbs.
80. 7 cwts. 2 qrs. 5 lbs. 3 oz.—6 cwts. 3 qrs. 27 lbs. 11 oz.
81. 3 fur. 9 po. 4 yds. 2 ft.—1 fur. 18 po. 4 yds. 2 ft.
82. 1 m. 1706 yds. 3 ft. 3 in.—1758 yds. 2 ft. 11 in.
83. 5 Fr. e. 3 qrs. 2 nl.—4 Fr. e. 4 qrs. 3 nls.
84. 16 E.e. 4 qrs. 1 nl.—15 E.e. 4 qrs. 3 nls.
85. 37 per. 30 yds. 8 ft. 90 inches—30 yds. 8 ft. 140 inches.
86. 150 acres 3871 yds. 8 ft.—9 acres 4761 yds. 8 ft.
87. 90 cu. yds. 5 cu. ft.—74 cu. yds. 7 cu. ft.
88. 84 cu. yds. 7 cu. ft.—83 cu. yds. 7 cu. ft.
89. 84 reams 16 quires 3 sheets—19 quires 5 sheets.
90. 15 hhds. 60 gals. 3 qts. 1 pt.—9 hhds. 62 gals. 2 qts. 1 pt.
91. 6764 gals. 2 qts. 1 pt.—5947 gals. 3 qts. 1 pt.
92. 14 kild. 1 fir. 1 gal. 3 qts.—12 kild. 1 fir. 8 gals. 1 qt.
93. 5 butts 1 hhd. 2 kild. 16 gals.—5 butts 0 hhd. 0 kild. 17 gals.
94. 9 bu. 3 pks. 1 gal. 1 qt.—7 bu. 3 pks. 1 gal. 3 qts.
95. 7 qrs. 7 bu. 2 pks. 0 gal.—6 qrs. 5 bu. 3 pks. 1 gal.
96. 1 yr. 300 days 14 hrs.—360 days 23 hrs. 5 min.
97. 1 century 97 yrs. 1 day 5 hrs.—99 yrs. 10 days 3 hours.
98. 9 ft. 9′ 8″ 3‴ 2⁗—4 ft. 11′ 3″ 10‴ 11⁗
99. 5 ft. 9′ 9″ 3‴ 4⁗—3 ft. 9′ 10″ 11‴ 8⁗
100. 50 quad. 80° 54′ 3″—3 quad. 87° 56′ 51″

101. 15 tons 3 cwt. 1 qr. 5 lbs. 9 oz. 14 dr.—14 cwt. 16 lbs. 9 oz. 15 dr.
102. 15 sq. m. 9,874 sq. links 5 inches—10 sq. m. 8 sq. ch. 9,900 links 5 in.
103. 8 qrs. 3 pks. 1 gal. 1 qt. 1 pt.—7 qrs. 1 bush. 3 pks. 1 gal. 1 qt.
104. 110 miles 1,720 yds 2 ft. 5 in.—100 miles 1,735 yds. 1 ft. 9 in.
105. 5 lbs. 1 ℥. 1 ʒ. 2 ℈. 19 grs.—4 lbs. 11 ℥ 23 ʒ. 1 ℈. 16 grs.
106. 15 F. e. 5 qrs. 3 nls. 1 in.—12 F. e. 5 qrs. 3 nls. 2 in.
107. 115 acres 3 roods 37 po. 15 yds.—110 acres 3 roods 39 po. 30 yds.
108. 5 round loads 30 cu. ft. 15 cu. in.—3 loads 39 cu. ft. 1,719 cu. in.
109. 5 tuns 3 hhds. 19 gals. 2 qts. 1 pt.—4 tuns 2 hhds. 54 gals. 3 qts. 1 pt.
110. 114 butts 1 hhd 2 kil. 1 fir.—110 butts 1 hhd. 2 kil. 1 fir. 6 gal.
111. 1 century 94 yrs. 300 days 5 hrs.—99 yrs. 360 days 23 hrs. 50 min.
112. 190 tons 5 cwt. 3 qrs. 16 lbs.—150 tons 14 cwt. 3 qrs. 20 lbs.
113. 5 lbs. 3 ℥. 7 ʒ. 2 ℈ 5 grs.—7 ℥. 7 ʒ. 2 ℈. 13 grs.
114. 428 bundles 36 quires—427 bundles 26 quires.
115. 91 acres 3 roods 29 po. 20 yds.—90 acres 3 roods 39 po. 5 yds.
116. 5 E.e. 4 qrs. 2 nls. 1 in.—3 E.e. 4 qrs. 3 nls. 2 in.
117. 15 cwt. 2 qrs. 20 lbs. 5 oz. 6 dr.—3 qrs. 27 lbs. 14 oz. 12 dr.
118. 1 lb. 11 oz. 19 dwts. 13 grs.—1 lb. 10 oz. 19 dwts. 23 grs.
119. 84 guineas 20s. 9¾d.—81 guineas 19s. 10¾d.
120. 3 leagues 2 miles 1,700 yds. 2 ft.—1 league 2 miles 1,750 yds. 1 ft.
121. 3 qrs. 5 bush. 1 pk. 1 gal. 2 qts.—2 qrs. 7 bush. 3 pks. 1 gal. 3 qts.
122. 15 cwt. 3 qrs. 21 lbs. 9 oz. 8 drs.—8 qrs. 26 lbs. 12 oz. 15 dr.
123. 1 mile 629 acres 3 roods 1 po.—630 acres 3 roods 1 po. 5 yds.
124. 174 tons 15 cwt. 2 qrs. 17 lbs. 8 oz.—150 tons 12 cwt. 3 qrs. 18 lbs. 9 oz.
125. 12 Fr.e. 4 qrs. 2 nls. 1 in.—9 Fr.e. 4 qrs. 3 nls. 2 in.
126. 5 tons of shipping 9 cu. ft. 170 in.—4 tons 20 cu. ft. 1,718 in.
127. 5 yrs. 300 days 10 hrs. 5 min.—4 yrs. 360 days 19 hrs. 50 min.
128. 9 lasts 1 load 4 qrs. 3 bush. 2 pks.—4 lasts 1 load 3 qrs. 7 bush. 3 pks.
129. 84 hhds. 62 gals. 2 qts. 1 pt. 2 gills—62 gals. 3 qts. 1 pt. 3 gills.
130. 2 kild. 1 fir. 6 gals. 1 qt. 1 pt.—1 kild. 1 fir. 8 gals. 3 qts. 1 pt.
131. 5 moidores 19s. 8¾d.—3 moidores 23s. 11½d.
132. 15 wks. 5 days 14 hrs. 3 min. 2 sec.—6 days 22 hrs. 14 min. 30 sec.
133. 854 tons 16 cwt. 2 qrs. 19 lbs. 8 oz.—19 cwt. 3 qrs. 14 lbs. 7 oz. 9 dr.
134. 120 lb. 4 ℥ 3 ʒ. 2 ℈ 13 grs.—110 lbs. 5 ℥. 5 ʒ. 0 ℈. 3 grs.
135. 8 Fl. e. 2 qrs. 2 nls. 1 in.—7 Fl. e. 2 qrs. 3 nls. 2 in.
136. 5 loads 20 ft. of round timber 1,420 in.—3 loads 30 ft. 1,490 in.
137. 5 acres 4,000 yds. 8 ft. 2 in.—3 acres 4,800 yds. 6 ft. 112 in.
138. 910 tons 5 cwt. 2 qrs. 19 lbs.—3 cwt. 3 qrs. 27 lbs. 8 oz. 3 dr.
139. 15 lbs. 10 oz. 16 dwts. 20 grs.—13 lbs 11 oz. 19 dwts. 23 grs
140. 5 leagues 2 miles 3 fur. 5 po.—2 miles 7 fur. 37 po. 5 yds.
141. 19 tons 1 cwt. 3 qrs. 19 lbs.—14 cwt. 3 qrs. 19 lbs. 7 oz. 14 drs.
142. 17 cwt. 2 qrs. 5 lbs. 5 oz.—3 qrs. 18 lbs. 14 oz. 8 drs.
143. 87 guineas 19s. 3½d.—14 guineas 20s. 11¾d.

## COMPOUND MULTIPLICATION.

| | £ | s. | d. | |
|---|---|---|---|---|
| 1. | 7 | 9 | 6 | ×2,3,4,5,6,7,8 |
| 2. | 8 | 6 | 9 | ×9,10,11,12,2 |
| 3. | 7 | 3 | 4 | ×3,4,5,6,7,8,9 |
| 4. | 8 | 3 | 6 | ×10,11,12,2,3 |
| 5. | 6 | 7 | 8 | ×4,5,6,7,8,9,10 |
| 6. | 9 | 7 | 3 | ×11,12,2,3,4,5 |
| 7. | 5 | 14 | 11¼ | ×6, 7, 8, 9, 10 |
| 8. | 19 | 17 | 10¾ | ×14, 15, 16, 17 |
| 9. | 27 | 15 | 9½ | ×18, 49, 20, 35 |
| 10. | 97 | 16 | 11¼ | ×54, 72, 90, 87 |
| 11. | 84 | 13 | 10½ | ×36, 60, 56, 64 |
| 12. | 92 | 15 | 11¼ | ×84, 72, 96, 89 |
| 13. | 93 | 14 | 6¾ | ×56, 80, 72, 37 |
| 14. | 91 | 18 | 10½ | ×84, 63, 90, 58 |
| 15. | 86 | 13 | 11½ | ×96, 84, 28, 72 |
| 16. | 74 | 11 | 9¾ | ×84, 54, 36, 95 |
| 17. | 29 | 12 | 8½ | ×74, 15, 90, 67 |
| 18. | 53 | 16 | 8¼ | ×96, 72, 36, 59 |
| 19. | 34 | 17 | 9½ | ×121, 132, 156 |
| 20. | 24 | 15 | 11¾ | ×144, 120, 192 |
| 21. | 29 | 13 | 2 | ×100, 108, 137 |
| 22. | 91 | 15 | 8¼ | ×156, 192, 164 |
| 23. | 74 | 14 | 8½ | ×372, 981, 185 |
| 24. | 68 | 15 | 11½ | ×157, 149, 192 |
| 25. | 73 | 15 | 8¾ | ×756, 932, 157 |
| 26. | 85 | 16 | 8¼ | ×872, 749, 932 |
| 27. | 75 | 17 | 9½ | ×642, 831½, 87 |
| 28. | 94 | 13 | 8¼ | ×873, 904, 561 |
| 29. | 69 | 15 | 11¼ | ×792, 357, 634 |
| 30. | 37 | 14 | 8½ | ×854, 391¼, 89 |
| 31. | 64 | 17 | 9¼ | ×357, 392, 926 |
| 32. | 79 | 16 | 11¼ | ×874, 937, 865 |
| 33. | 67 | 17 | 8½ | ×973, 847, 392 |
| 34. | 57 | 16 | 8½ | ×549, 374, 859 |
| 35. | 93 | 14 | 7¼ | ×129, 324, 764 |
| 36. | 67 | 16 | 8½ | ×357, 961, 582 |
| 37. | 92 | 13 | 11½ | ×547, 691, 379 |
| 38. | 57 | 12 | 8½ | ×391, 742, 648 |

| | £ | s. | d. | |
|---|---|---|---|---|
| 39. | 9729 | 16 | 4½ | ×8764, 764 |
| 40. | 5478 | 13 | 11½ | ×9647¼, 39 |
| 41. | 7478 | 15 | 8½ | ×7647, 841 |
| 42. | 5676 | 17 | 8½ | ×5732½, 72 |
| 43. | 6741 | 14 | 6¼ | ×3971¾, 84 |
| 44. | 5472 | 12 | 11½ | ×5964, 722 |
| 45. | 6793 | 12 | 10½ | ×6847, 351 |
| 46. | 9647 | 13 | 11¼ | ×7854½, 86 |
| 47. | 3967 | 12 | 8 | ×5647, 757 |
| 48. | 5197 | 15 | 11¼ | ×3691¼, 84 |
| 49. | 6742 | 12 | 10½ | ×5643, 729 |
| 50. | 5637 | 11 | 11½ | ×3564¾, 34 |

51. 12 lbs. 5 oz. 7 dwts. × 27
52. 15 lbs. 11 oz. 19 dwts. × 97
53. 7 lbs. 9 ℥. 2 ʒ. 2 ℈. 5 gr. × 9
54. 8 ʒ. 0 ℈. 3 grs. × 79, 84
55. 19 F ℥. 7 F ℥. 54 m. × 59, 27
56. 15 C. 3 O. 6 F ℥. × 29, 87, 75
57. 7 tons 14 cwt. 2 qrs. × 97
58. 3 qrs. 17 lbs. 8 oz. 2 dr. × 84½
59. 9 yds. 3 qrs. 2 nls. × 87, 93
60. 2 qrs. 3 nls. 2 in. × 72, 89
61. 106 yds. 2 qrs. 2⁸⁄₉ nls. × 59, 68
62. 9 po. 5 yds. 8 ft. × 87, 35¼
63. 85 cu. ft. 32 in. × 729, 34
64. 9 cu. ft. 49 in. × 542, 723
65. 15 re. 19 qui. 3 sheets × 729¾
66. 11 bund. 5 qui. × 374
67. 3 qts. 1 pt. 2 gills × 72, 37
68. 5 hhds. 54 gal. 3 qts. × 86, 53
69. 2 fir. 8 gals. 3 qts. × 72, 81¾
70. 57 butts 94 gals. × 796, 93
71. 8 qrs. 3 bu. 2 pks. × 73, 89
72. 2 weys 3 qrs. 1 bu. × 59, 72
73. 5 yrs. 6 wks. 3 dys. × 53, 64
74. 7 hrs. 6 min. 2″ × 98, 37, 54
75. 4 quad. 84° 59′ × 37, 82, 67
76. 1 cir. 3 quad. 1° × 67, 34, 32

77. £7864 19s. 11¼d. × 840, 730, 26, 94, 30, 516, 437, 81
78. 5 tons 8 cwt. 3 qrs. 4 lbs. 8 oz. 3 dr. × 84, 71, 38, 126
79. 3 miles 1 fur. 12 poles 3 yds. 2 ft. 5 in. × 71, 84, 39, 62
80. 7 lasts 1 wey 4 qrs. 7 bush. 3 pks. 1 gal. × 76, 84, 29
81. 8 lbs. 7 oz. 19 dwts. 23 grs. × 74, 81, 32, 68, 98, 120
82. 3 miles 1506 yds. 2 ft. 5 in. × 124, 137, 19, 84, 63, 92
83. 1 sq. mile 500 acres 3 roods 37 poles 5 yds. × 81, 74, 98
84. 21 printer's bundles 7 quires 5 sheets × 87, 39
85. 90 cu. yds. 23 ft. 1700 in. × 86, 74, 150, 169, 32, 85, 96
86. 6 Fl. e. 2 qrs. 3 nls. 1 in. × 74, 810, 31, 96, 72, 81, 99, 84
87. 1 hhd. of beer 34 gals. 2 qts. 1 pt. × 716, 87, 32, 99, 87
88. 50 yrs. 5 wks. 4 days 9 hrs. 3 min. 5″ × 29, 64, 79, 81
89. 84 hhds. of wine 60 gals. 3 qts. 1 pt. 2 gills × 73, 29, 85
90. 37 lasts 1 load 4 qrs. 4 bu. 3 pks. 1 gal. 1 qt. × 79, 85
91. £847 16s. 11¾d. × 1264, 91, 182, 76, 251, 14, 37, 8564
92. £391 12s. 9½d. × 563, 84, 79, 29, 32, 71, 86, 72, 157
93. 70 tons 5 cwt. 1 qr. 8 lbs. 3 oz. × 56, 78, 91, 37, 82, 74
94. 5 sq. miles 94 acres 1170 sq. links × 729, 34, 87, 61, 92
95. 87 tons 14 cwt. 3 qrs. 5 lbs. 8 oz. × 72, 84, 96, 120, 37
96. 64 miles 1540 yards 2 ft. 1 in. × 87, 39, 82, 150, 67, 81
97. £748 19s. 7½d. × 84. 39, 81, 76, 54, 82, 67, 87, 64
98. £576 15s. 11¼d. × 876, 37, 85, 29, 1564, 93, 24, 85, 637
99. 12 lbs. 11 ℥. 5 ʒ. 2 ℈. 10 grs. × 84, 71, 92, 36, 44, 79, 82
100. £97 13s. 4¾d. × 81, 74, 826, 37, 85, 92, 112, 76, 83, 864, 72
101. 15 tons 3 cwt. 2 qrs. 5 lbs. 8 oz. × 74, 87, 37, 82, 34, 61
102. 18 miles 6 fur. 3 po. 4 yds. 2 ft. 7 in. × 72, 81, 95, 64
103. 14 tons 5 cwt. 3 qrs. 9 lbs. × 72, 36, 98, 89, 57, 29, 81
104. 4 leagues 2 miles 7 fur. 2 po. 5 yds. × 72, 96, 37, 45, 57
105. £87 5s. 9¾d. × 784, 29, 36, 57, 81, 92, 39, 57, 67, 76
106. 20 tons 2 cwt. 1 qr. 5 lbs. 8 oz. × 79, 24, 61, 37, 82
107. £125 19s. 11½d. × 56, 72, 91, 37, 84, 292, 847, 632, 129
108. 3 yds. 2 qrs. 2 nls. 1 in. × 57, 32, 81, 76, 92, 34, 71, 85
109. 7 cu. yds. 24 ft. 5 in. × 726, 85, 74, 39, 84, 72, 81, 75
110. 154 tons 19 cwt. 2 qrs. 15 lbs. 9 oz. 0 drs. × 74, 93, 82
111. £547 7s. 6¾d. × 72, 85, 39, 164, 78, 129, 39, 185, 722, 37
112. £172 5s. 11½d. × 39, 88, 157, 37, 85, 129, 154, 168, 157
113. £78 19s. 11¾d. × 72, 85, 36, 27, 86, 124, 156, 291, 34
114. £150 17s. 8¼d. × 871, 315, 647, 876, 319, 37, 14, 16, 28
115. £764 15s. 7¾d. × 764, 129, 176, 37, 85, 64, 72, 81, 17
116. £567 19s. 8¼d. × 57, 83, 72, 81, 74, 68, 72, 85, 94, 37
117. £904 12s. 2½d. × 69, 79, 85, 129, 149, 153

## COMPOUND DIVISION.

£ s. d.

1. 9 6 8 ÷2,3,4,5,6,7,8
2. 6 3 4 ÷9, 10, 11, 12
3. 8 6 11 ÷2,3,4,5,6,7,8
4. 4 5 8 ÷9, 10, 11, 12
5. 7 14 9 ÷2,3,4,5,6,7,8
6. 9 19 11¼÷9, 10, 11, 12
7. 74 15 11¾÷57, 74, 35, 37
8. 92 16 10¼÷92, 39, 78, 56
9. 54 14 11½÷97, 37, 58, 94
10. 99 18 10¼÷59, 18, 76, 82
11. 54 15 11½÷37, 94, 68, 37
12. 79 15 10¼÷84, 93, 87, 68
13. 54 12 7½÷35, 17, 92, 74
14. 79 13 8¼÷27, 15, 19, 92
15. 57 12 11¼÷37, 17, 78, 81
16. 91 14 9¼÷59, 87, 64, 37
17. 87 11 3½÷87, 69, 32, 92
18. 27 15 8¼÷34, 59, 81, 77
19. 78 11 7½÷35, 86, 71, 29
20. 59 15 8¼÷84, 73, 98, 36
21. 86 17 11¾÷79, 15, 39, 68
22. 93 16 8¼÷58, 91, 73, 94
23. 64 17 10½÷86, 19, 82, 37
24. 91 11 8¼÷39, 18, 99, 57
25. 876 15 9¾÷764, 871, 43
26. 982 13 11¼÷876, 541, 37
27. 647 15 8¾÷392, 647, 61
28. 937 19 11½÷642, 578, 72
29. 758 15 8¼÷729, 864, 87
30. 234 19 11½÷853, 677, 94
31. 982 17 11¼÷374, 849, 23
32. 874 15 11¾÷872, 129, 86
33. 972 15 8½÷729, 356, 57
34. 879 13 10 ÷543, 729, 34
35. 982 12 11¼÷376, 549, 27
36. 728 10 10¼÷675, 841, 65
37. 964 18 11¼÷391, 227, 82
38. 867 14 8¾÷778, 291, 93
39. 768 13 10¼÷559, 227, 24

£

40. 97648723÷57, 846, 212, 56
41. 85672 3s. 4d.÷6, 782, 137
42. 92684317 2s. 8d.÷7, 857
43. 85761318 1s. 3¼d.÷728
44. 564787 8s.÷78, 431, 234
45. 967847 8s. 4¼d.÷21, 840
46. 678192 5s. 3¾d.÷31, 567
47. 875182 8s. 11d.÷51, 782
48. 374187649÷3, 584, 789
49. 58721 13s. 8¾d.÷87, 543, 38
50. 17218 16s. 7¼d.÷51, 834, 92
51. 9 oz. 8 dwts. 5 grs.÷27, 34
52. 7 lbs. 9 oz. 3 dwts.÷17, 43
53. 12 ℥. 7 ʒ. 2 ℈.÷19, 25, 76
54. 17 ℥. 6 ʒ. 1 ℈.÷16, 38, 51
55. 74 C. 6 O. 9 F ℥÷17, 26
56. 19 F ℥. 7 F ʒ. 4 ♏÷37, 59
57. 5 tons 3 cwts. 2 qrs.÷58, 92
58. 7 tons 23 lbs. 2 oz.÷97, 83
59. 9 miles 7 fur. 5 yds.÷43, 37
60. 8 miles 9 yds. 2 ft.÷57, 73
61. 7 E.e. 4 qrs. 3 nls.÷24, 39
62. 9 Fr.c. 5 qrs. 2 nls.÷34, 47
63. 7 acres 4000 yards÷67, 59
64. 9 acres 3 roods 3 po.÷51, 28
65. 59 cu. yds. 9 ft. 8 in.÷87, 93
66. 79 cu. yds. 4 ft. 97 in.÷9, 90
67. 49 quires 27 sheets÷57, 93
68. 60 reams 3 quires÷31, 27
69. 129 gals. 3 qts.÷59, 34, 29
70. 9 tuns. 2 hhds. 1 gal.÷371
71. 9 butts 2 hhds. 3 gals.÷647
72. 79 hhds. 62 gals. 1 qt.÷359
73. 75 qrs. 0 bu. 3 pks.÷84, 76
74. 9 weys 3 qrs. 5 bu.÷78, 93
75. 5 yrs. 84 days 6 hrs.÷8, 89
76. 9 cent. 5 yrs. 7 days÷38, 56
77. 84 tons 9 cwts. 3 qrs.÷74, 67
78. 97 tons 3 qrs. 2 lbs.÷86, 57

79. £7864 9s. 11¼d.÷84, 79, 82, 63, 154, 1764, 29, 756, 37
80. 150 tons 4 cwt. 0 qrs. 7 lbs. 5 oz. 3 dr.÷120, 94, 61, 33
81. 313 miles 5 fur. 8 po. 4 yds. 2 ft. 3 in.÷126, 57, 872, 37
82. 154 lasts 1 wey 4 qrs. 7 bush. 2 pks.÷97, 2, 374, 81, 56
83. 178 lbs. 9 oz. 19 dwts. 23 grs.÷120, 39, 87, 64, 72, 154
84. 174 miles 5 fur. 8 po. 3 yds. 2 ft. 1 in.÷28, 74, 29, 159
85. 3927 sq. miles 500 acres 2 roods 8 po.÷547, 654, 120, 71
86. £7864 15s. 9¾d.÷1764, 218, 76, 876, 576, 293, 81, 94
87. 194 cu. yds. 23 ft. 1600 in.÷127, 64, 31, 19, 58, 72, 81
88. £787 16s. 8¼d.÷3176, 257, 84, 93, 74, 82, 27, 61, 9, 157
89. 154 hhds. of beer 53 gals. 2 qts. 1 pt.÷127, 64, 39, 85, 94
90. 750 years 194 days 9 h. 7 m. 5″÷374, 291, 85, 27, 51, 22
91. 1374 lasts 1 load 4 qrs. 7 bush÷564, 721, 376, 52, 81, 37
92. £1764 8s. 11¼d.÷1728, 564, 729, 847, 637, 2187, 856, 34
93. £3954 18s. 10½d.÷376, 547, 872, 93, 39, 87, 29, 857, 64
94. 1740 tons 3 cwts. 2 qrs. 15 lbs.÷72, 81, 37, 157, 642, 85
95. 154 sq. miles 90 acres 2 roods÷72, 85, 94, 36, 72, 81, 928
96. £375 19s. 11¼d.÷87, 647, 83, 321, 856, 72, 847, 391, 657
97. 1567 miles 1 fur. 3 po. 2 yds. 2 ft. 1 in.÷8764, 391, 264
98. £7467 19s. 11½d.÷72, 847, 397, 864, 21, 18, 74, 82, 391
99. £3221 11s. 8¾d.÷37, 864, 293, 871, 54, 29, 87, 65, 34
100. 1974 lbs. 11℥ 7ʒ ℈2 15 grs.÷27, 84, 72, 85, 391, 964, 82
101. 1764 tons 8 cwts. 3 qrs. 14 lbs. 8 oz.÷376, 841, 716, 812
102. 1574 leagues 2 miles 1740 yds. 5 ft÷72, 85, 34, 1270, 51
103. £7847 19s. 11¼d.÷1264, 765, 327, 841, 91, 87, 61017, 64
104. £3964 11s. 3½d.÷1072, 718, 514, 321, 17, 64, 78, 219, 37
105. 1574 yds. 3 qrs. 2 nls. 1 in÷219, 64, 28, 34, 29, 120, 154
106. 1764 cu. yds. 5 ft. 4 in.÷712, 810, 376, 72, 187, 847, 31
107. 8764 tons 5 cwt. 3 qrs. 9 lbs. 8 oz. 7 dr.÷212, 81, 812
108. 5687 tons. 3 cwt. 2 qrs.÷72, 84, 37, 16, 15, 12, 197, 164
109. £87649 3s. 5½d.÷764, 71, 85, 72, 1276, 2190, 827, 1560
110. £59684 1s. 11¼d.÷672, 51, 812, 391, 272, 864, 17, 762
111. £38219 13s. 10½d.÷672, 51, 812, 391, 272, 864, 17, 372
112. 1760 tons 5 cwt. 3 qrs. 19 lbs. 4 oz. 8 dr.÷74, 23, 1647
113. 876 miles 14 yds. 2 ft. 3 in.÷64, 817, 319, 226, 81, 317
114. 1764 sq. yds. 22 ft. 157 in.÷127, 314, 716, 127, 21, 74
115. £2174 15s. 7½d.÷127, 642, 39, 841, 764, 37, 82, 85, 96
116. £1574 16s. 8¼d.÷164, 37, 672, 312, 746, 85, 67, 172, 35
117. 1574 tons 3 cwt. 2 qrs. 15 lbs. 2 oz. 5 dr.÷764, 910, 314
118. £8767 8s. 11¼d.÷2168, 7872, 5197, 84, 71, 33, 22, 1278
9. £7856 9s. 7½d.÷156, 974, 391, 227, 843, 692, 8176

## QUESTIONS IN COMPOUND ADDITION, SUBTRACTION, MULTIPLICATION, AND DIVISION.

1. My purse contained £15 3s. 4d., and I paid away £6 5s. 11½d.; how much was left?

2. I paid to A £5 6s. 4d., to B £9 3s. 11½d., to C £7 4s. 3¾d., to D £9 8s. 3½d., to E £15 3s. 11¾d., to F £11 19s. 3½d., to H £6 3s. 4½d., and to I £157 5s. 4½d.; how much did I pay altogether?

3. If £159 6s. 7¾d. be divided equally amongst 19 people, how much will each receive?

4. If 10 children have each £3 9s. in the saving's bank, what sum have they saved altogether?

5. What sum will pay 6 servants their wages for a year if each receive 9 guineas?

6. If 9 tons of coals be distributed amongst 10 poor people, how much will each get?

7. What will 12 lbs. of beef cost at 9½d. per lb.?

8. 12 lbs. of cheese cost 8s. 9d.; what is that per lb.?

9. 2 turkeys weigh each 14 lbs., and are sold at 9¼d. per lb.; what do they make?

10. What will 19,000 cubic feet of gas cost at 4s. 6d. per 1,000?

11. If my gas bill amounts to £3 19s. 2d., and I pay 4s. 2d. per thousand cubic feet, how many feet have I burnt?

12. What will 12 books cost, No. 1 being 8s. 6d.—No. 2, 5s. 4d.—No. 3, 15s. 6d.—No. 4, 9s. 3d.—No. 5, 7s. 8d.—No. 6, 11s. 7d.—No. 7, 19s. 6d.—No. 8, 27s. 6d.—No. 9, 13s. 8d.—No. 10, 17s. 10d.—No. 11, 15s. 8½d.—and No. 12, 19s. 11d.?

13. What will a man getting 19s. 6d. per week earn in 2 years?*

14. How many miles could a man ride by rail for £2 8s. 3d. at three farthings per mile?

15. How many oranges can I buy for 6s. 3d. at 2 for 1½d.?

16. How much is gained by selling 10,000 books at 6d. each which cost 5¼d.?

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* NOTE.—Where the weeks in a year are mentioned, 52 are to be taken without any fraction.

17. If a gardener earn £1 4s. weekly and save one-ninth of it, how much will he save in 5 years?

18. What is the cost of 8½ lbs. of beef at 7½d. per lb., and 9¼ lbs. of mutton at 9d.?

19. If a dog costs a farthing a day to keep, how long can he be kept for £2?

20. What is the annual cost of keeping a house at the following rate of expenditure:—Baker, £10 3s. 6d.; cheesemonger, £1 9s. 3½d.; butcher, £20 9s. 6d.; rent and taxes, £29 3s. 4d.; grocer, £16 3s. 9d.; washing, £20 7s. 8d.; wages, £25 7s. 6d.; milkman, £20 7s.; chemist, £5 3s. 6d.; greengrocer, £4 5s. 9d.; gratuities, £3 7s. 4d.; and sundries, £20 7s. 4d?

21. How much may a person with £275 a year spend daily?

22. If a housekeeper spend £1 5s. 6d. daily, and lay by quarterly £20, what is the yearly income?

23. A person with £300 a year wishes to save 10s. a week; how much may be spent weekly?

24. A person has £50 a year from property, and £270 from business; after laying by £60 he spends the remainder; how much does he spend daily?

25. How much does a schoolmaster save on his ink account if he use 18 gallons a year and get it in one cask for £1 16s., instead of in single gallons at 3s. 9d. per gallon?

26. 8 children go out on a pic-nic with 2s. each in their pockets; they spend 3s. 4d. on their fare, 8d. on oranges, 1s. 2d. on biscuits, 1s. 6d. on ginger beer, 3s. 7d. on pork pies, and 9d. at the ferry; how much have they each left?

27. A lad goes to business at 14 years old, at 5s. per week, to be raised 2s. a week each year till 21; how much will he earn in those 7 years?

28. A table-cover with a pattern on it in inch squares, is 3 yards long and two wide; how much money would lie on it if there were a halfpenny on every square?

29. A book in 30 volumes published at 7s. 6d. per volume is bought for 5 guineas; how much is saved on the publishing price?

30. A servant's wages are £9 a year; how much is that daily?

31. A chapel requires 600,000 bricks for its walls; how much will they cost at 19s. 6d. a thousand?

32. A room costs furnishing as follows:—Piano, 30 guineas; book-case, £11 5s.; 6 chairs, £1 7s. each; sofa, £6 10s.; table, £8 5s.; window curtains, £10; coal box, 5s. 6d.; fender and fire-irons, £2 8s. 7d.; carpet, £8; hearth-rug, 19s. 6d.; easy chair, £3 10s.; time-piece, £3 10s.; ornaments, £1 5s.; footstools, £1 5s.; gaselier, £3 5s.; and tray stand, 5s. 6d.: what is the total cost?

33. How long would it take to count £100,000 in penny pieces at the rate of a piece in a second?

34. How often does a child move its foot in walking 3 miles if it steps 18 inches at once?

35. If the following things are paid for out of a fifty pound note how much is left: calico £1 9s. 6d., print £2 1s. 9½d., carpets £12 7s. 3½d., curtains £5 8s. 1½d., tea £1 9s. 4d., bread £2 16s 8½d., meat £5 8s. 4½d., shoes £2 1s. 9½d., and sundries £2 2s. 8½d.?

36. If a grocer buy a ton of currants for £37 6s. 8d. and retail them at 5d. per lb., how much does he gain?

37. A daily newspaper has 3 pages of advertisements with 5 columns on a page and an average of 44 advertisements in each, if the advertisements pay on an average 6s. 6d. each, what will the whole produce in a day, a week, and a year?

38. What is the cost of 300 hhds. of French wine at 14s. per gallon?

39. What sum must 300 hhds. of French wine be sold for that cost 12s. 6d. per gallon to gain 9d. per gallon?

40. What must a cabinet maker sell a sofa for if the materials cost him £1 15s., the making takes a man 6 days at 5s. 3d. a day, and he puts on a profit of 15s.?

41. If a family burn 5¼ tons of coal in a year and the price suddenly goes up a penny per cwt., how much will the family's expenses in fuel be increased in a year?

42. If I buy a cucumber frame for 2 guineas, give a man 2s. 6d. for making the hot-bed, 4s. for oak bark, and 2s. for seed, and after this outlay cut 45 cucumbers, what do they cost me each?

43. *If a factory with 300 hands earning 19s. 8d. each weekly reduces the wages a penny in the shilling, what will the proprietors save in the year?

44. What will a boy's education cost at 18s. 6d. per quarter for 9 years?

45. A butcher buys a bullock for £30 and sells from it 810 lbs. of beef at 8d. per lb., how much does he gain?

46. A farmer has 35 hens that each lay an egg on an average every other day; if he sell the eggs at 15 for a shilling how much will they produce in 4 years?

47. A farmer receives for corn sold £976 8s. 4d. but he has to pay rent £120 10s. 8d., wages £259 8s. 4d., manure £75 3s. 9d., and incidentals £25 9s. 4d.; how much does he gain?

48. A farmer sells 20 sheep for £30 to a butcher who sells them again at 6d. per lb., gaining £10; how many pounds did the 20 sheep weigh?

49. If I gain £20 per month in business for the first 11 months in the year, but lose £24 in December, what is my profit for the year?

50. If a housekeeper has 3 fires burning regularly, each consuming 30 lbs. of coal daily, what will his year's coal bill be when coals are 13s. 6d. per ton?

51. A farmer has 20 cows each yielding on an average 12 lbs. of butter weekly: what will he realise in a year from this source when butter averages 17d. per lb.?

52. A grocer buys a cask of currants weighing a ton for £38, and after deducting for the weight of the cask 50 lbs., and for waste 15 lbs., sells the remainder at 5d. per lb.; what does he gain?

53. If a boy loiter over dressing 20 minutes daily, how much time does he waste in a year?

54. How many railway chairs weighing 47 lbs. each can be cast out of 500 tons of iron?

55. If 500 tons of iron costing £4 10s. per ton furnish 22 000 railway chairs, what is the cost of material in each?

56. How many yards of calico can be made from 500

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* The working days in a year are taken at 313.

bales of cotton each 4 cwt., a yard of calico being half a pound in weight?

57. A miller buys 50 quarters of corn averaging 190 lbs. per sack in weight, at £2 10s. 6d. per quarter: if he makes 180 lbs. of flour from each sack and sells it at 2d. per lb., what does he gain by the flour?

58. If a ton of iron costing £11 be drawn into 5 miles of wire, what do 10 yards of the wire cost?

59. A newspaper sells 3,000 copies weekly at 3d. each, and receives £50 weekly for advertisements; but it costs for composition £30, paper £20, machining £3, and for incidentals £10: what is the weekly profit?

60. An author sells 5,000 copies of a book costing him £75 at 6¾d. per copy; what does he gain?

61. My tailor's bill amounts to £15 a year with a discount of 6d. in the pound for prompt payment; what should I save in 20 years by paying promptly?

62. A grocer buys a chest of tea weighing 60 lbs. for £8; what will he gain by retailing it at 4d. per oz.?

63. If a baker selling 900 lbs. of bread daily raises the price ¼d. per lb., how much difference will it make in his receipts for 12 months?

64. If a gas stove is kept burning daily at a cost of 6d. each day when gas costs 2s. 6d. per 1,000 cubic feet, how many feet of gas does it consume in a year of 365 days?

65. If a family consume 6 lbs. of meat daily and the price is raised from 6d. to 6¾d. per lb., what difference will the rise make in a year's expenditure?

66. If a soldier cost £55 10s. 6d. a year, what is the annual cost of an army of 180,000 men?

67. If two commercial travellers go on an average 30 miles a day for the 313 working days in each year, the one travelling first-class at 2d. a mile, the other third-class at 1d. a mile, in 30 years, how much will the travelling expenses of the first-class man exceed those of the other?

68. What will it cost to bind a library of 4,000 volumes; quarto volumes costing 4s. each; octavos, 3s. 6d.; duodecimos, 2s. 3d.; and 18 mos., 1s. 9d. each; ¼ being quartos, ⅛ octavos, ⅜ duodecimos, and ¼ 18 mos.?

69. Wire rope can be spun at the rate of 20 miles a

day; how long would it take to make a rope to reach round the equator, which is 24,860 miles long?

70. If a journey by railway take 2 days 5 hours 45 min., how long would it take by coach at 3-7ths the railway speed?

71. Suppose I walk a mile in 15¾ minutes, how many days should I be walking 299¼ miles if I continued walking 3 hours daily?

72. If a boy's school life last 7 years and he have 4 weeks 3 days holiday at Christmas, and 5 weeks 2½ days at Midsummer, how much holiday time has he in the 7 years?

73. If I have a journey of 3,521 miles to go and walk daily 3 miles an hour for 8 hours, how long will it take me?

74. The rates of a borough amount to £10,000 annually; if the rateable property is valued at £51,860 how much are the rates in the pound?

75. If a labourer thrash 4 bush. 3 pks. daily, how long would he be thrashing 100 quarters?

76. How many bricks are there in a park wall 3 miles long, 9 ft. high, and containing 50 bricks in each square yard?

77. What is the value of 8 ingots of silver each weighing 3 lbs. 5 oz. at 6s. 8d. per ounce?

78. If I have an income of £150 a year, how much may I spend daily so as to save £20 a year?

79. How many solid yards of coal will 50 miners get in a year if each dig 3 yds. 19 ft. 112 in. daily?

80. I want to divide 3 cwt. 2 qrs. 8 lbs. of sugar into parcels of 3 lbs., 2½ lbs., 1¾ lbs., 1½ lbs., 1¼ lbs., and to have an equal number of parcels of each weight; how many parcels should I have in all?

81. A wine merchant buys 3 hhds. of wine at Bordeaux at £15 per hhd., pays duty 1s. per gallon, and carriage £3, what must he sell the wine at per gallon to clear £10 by the transaction?

82. How many gold pencil cases, each weighing 10 dwts. 6 grs., could be made out of 7 oz. 3 dwts. 12 grs. of gold?

83. If a man smoke a threepenny cigar daily weighing

9 drams, how much would he spend in cigars in 50 years, and what weight of tobacco would he smoke?

84. If a million cannon shots are thrown at a besieged town costing 15s. 9d. each and fired with 14 oz. of powder each, costing 1s. 4d. per lb., what is the cost of the cannonade, and how many poor boys would the sum educate for a year at 30s. a head?

85. If 1000 oranges cost £2 1s. 8d. and 1-5th prove decayed, what must the remainder be sold at each to gain £1 5s. by the whole?

86. How many pills each containing 6 ℈ 2 grs. can be made out 1 lb. 5 ℥ 7 ʒ of aloes?

87. If a hhd. of wine cost £14 and 10 gallons be wasted, what must the remainder be sold at per gallon to realise £14?

88. How many feeds of horse-corn in 5 qrs. if 1 feed consist of 1¾ qts.?

89. What is the worth of 10,000 herrings at 2 for three half-pence?

90. If 15,000 herrings are sold at two for three half-pence and each of them weighs 4 oz., what is the cost of the whole, and what the cost per stone of 14 lbs.?

91. If a baker making 500 loaves of 4 lbs. each a day raises his bread ½d. a pound, what will be the increase of his receipts for a month of 28 days?

92. A grocer buys a chest of tea weighing 50 lbs. for £7 10s. and gains a farthing per ounce in selling it; what does he sell the whole for?

93. If 300 weavers each produce 20 yards of calico daily, which is sold at a gain of ⅛d. a yard, what will be the profit on the weavers' work for a year?

94. If a man drink a pint of beer daily costing 1¾d., and continue this through a life of 60 years, what does his beer cost?

95. If I want to distribute 6 lbs. 15 oz. of sweet meats to 37 boys and 37 girls so that each boy may get twice as much as each girl, how much must I give to each?

96. If 33 ingots of silver each weighing 3 lbs. 2 oz. were made into coins of 1 oz. 4 dwts. each, how many coins would there be?

97. A cask of sugar is sold at 6d. a lb., ½d. of which

is profit, and the whole makes £100; how many pounds did the cask weigh at first?

98. How long would 3 men be in reaping a field of 12 acres if each did 20 perches a day?

99. If 559 men earn 7d. an hour each, and work 9 hours a day, what will they earn in a year, and what will the master's profit on their labour be at ¾d. a day each?

100. How long would it take 20 weavers who each do 9 yards a day, to make cloth for furnishing an army of 10,000 with three shirts each, a shirt containing 4 yards?

101. If a man sweat 100,000 sovereigns to the extent of 3 grains each and sell the gold obtained at the mint price, how much does he make?

102. What will cloth for 1,000 coats each containing 2 yds. 1 qr. 3 nls. cost at 6s. 8d. a yard?

103. A tradesman, for the 3 first years he was in business, lost on an average £21 a year, but for the following 54 years gained at the rate of £91 3s. 4d. a year; how much did he gain in these 57 years?

104. How much rum will serve a man-of-war's crew of 964 men for a year if each man has a gill every week day, and two every Sunday?

105. An iron merchant buys 500,000 tons of iron at £3 10s. a ton and sells it a profit of 6d. in the pound; what is his gain?

106. What will be the annual rental of 3,000 acres of land at 15s. 9d. an acre?

107. What is the value of 15 gross of copy books at 3s. 9d. per dozen?

108. If 135 acres of land let for £156 7s. 6d. yearly, what is the half-year's rent of 1 acre?

109. A ton of cheese is worth £51 6s. 8d., what is that per lb.?

110. 7 pieces of silk each containing 25 yards at 3s. 9d. a yard were made into 35 dresses, what did each dress cost?

111. If a boy get 2d. a week and 5s. on every birthday till he is 15 years old and save the whole, how much will he have?

112. What is the weight of a guinea if 90 can be ined from 2 lbs. of gold?

113. Bought 26 cheeses each weighing 49½ lbs.; what did they cost at 5¾d. a pound?

114. If a farmer get 3 qrs. 7 bush. of wheat per acre off 94 acres and sells it £2 10s. 6d. a quarter, what does his wheat make?

115. If a steamship passage for 3,000 miles costs £52, what is that per mile?

116. If a farmer can keep 20 cows that make £15 worth of butter each a year on 40 acres of land costing 25s. an acre for rent annually, what does he gain by the cows?

117. What is the worth of 19 bales of cotton averaging 167 lbs. per bale at 5¾d. a pound, allowing 2 lbs. waste each bale for package?

118. An artist sells a picture for £5,000. The purchaser exhibits it daily for 5 years, admitting on an average 150 persons daily, at 1s. a head, and then sells the picture again for £6,000; how much money does the purchaser of the picture gain, reckoning the expenses of the exhibition £1,050?

119. A gentleman dying left an estate worth £19,000, of which 1-5th was to go to his widow, and the remainder to be divided amongst his 7 children; how much will each get?

120. I see a flash of lightning 12 seconds before I hear the thunder; as sound travels 1,125 feet per second, how far off was the scene of explosion?

121. Divide £97 amongst 5 women and 10 men, giving each woman three times as much as a man; what will each get?

122. How much property tax must be paid on £7,964 at 2s. 9¾d. in the pound?

123. A butcher buys 4 cows for £83, and from them sells 3,200 lbs. of beef at 6½d., besides the offal and hide of each cow for 15s. 9d.; what does he gain?

124. If an infirmary relieve 8,764 persons in a year at an average cost of £3 5s. 7½d. each, and employ 3 surgeons at £200 a year each, 5 nurses at £37 a year each, a porter at £1 weekly, 6 servants at £4 10s. a month each, and a secretary at £300 a year, what is the annual expenditure?

## SIMPLE PROPORTION.

1. If 7 lbs. of tea cost 28s., what will 42 lbs. cost?

2. Bought 63 lbs. of butter at the rate of 3 lbs. for 4s.; how much did it cost?

3. If 5 bags of potatoes cost 35s., how much will 130 bags cost?

4. How much will 148 yards of calico cost if 4 yards cost 2s.?

5. If 12 yards of silk cost 48s., what quantity can be bought for 76s.

6. What weight of tea can be bought for 90s. if 13 lbs. cost 65s.?

7. How much will 96 slates cost, if 6 cost 1s. 6d.?

8. If 5 tons of coal cost 85s., how much will 200 tons cost?

9. How much will 3 bushels of wheat cost if 30 bushels cost £15?

10. What will 7 sheep cost if 49 cost £196?

11. Find the value of 32 lbs. of cheese at the rate of 4 lbs. for 3s.

12. If 14 horses cost £280, how much is that for 12?

13. If the carriage of 4 tons for 20 miles be 10s., what will be the carriage of 42 tons for the same distance?

14. If 16 men earn £40, what sum will 48 men earn at the same rate?

15. A man spends £72 in 9 months, how much will he spend in 14 months at the same rate?

16. A field of 20 acres produces 480 bushels of wheat, how much will a field of 340 acres, and of the same fertility, produce?

17. If 17 yards of cloth cost 102s., how much will 3 yards cost?

18. If 13 acres of land cost £780, what quantity can be bought for £24,000?

19. If 12s. are given for 16 lbs. of butter, how much can be bought for 18s.?

20. What time should 24 men take to perform a piece of work which 8 men can perform in 12 days?

21. If £480, when put into the bank for a certain time, gain £26 interest, how much would £1,200 gain in the same time?

22. 20 acres of wheat are cut down in 4 days, how long ought the same reapers to be in cutting down 45 acres?

23. If 18 lbs. of figs cost 21s., what quantity may be bought for 63s.?

24. Bought 18 lbs. of tea for £4 7s. 6d., how much is that for 3 lbs.?

25. How much sugar may be bought for £2 13s. 4d. if 17 lbs. cost 7s. 1d.?

26. What will 45 tons of coal cost if 13 tons cost £8 18s. 9d.?

27. If the carriage of 40 tons 5 cwt. cost £5 0s. 7½d., what will the carriage of 84 tons 10 cwt. cost?

28. What must be paid for 195 yards 3 qrs. of cloth at the rate of 13s. 6d. for 2 yards 1 qr.?

29. A man spends £30 11s. 3d. in 3 months, how much will he spend in 13 months at the same rate?

30. How many yards of silk may be bought for £20 6s. 8¼d., if 9 yards cost £1 10s. 4½d.?

31. If I gain 9d. on 6 lbs. of coffee, how much ought I to gain on 3 cwt. 2 qrs. 7 lbs.?

32. Bought 240 tons 5 cwt. of coal for £150 3s. 1½d., how much is that for 13 cwt.?

33. If 8 ounces of gold are worth £31 3s., how much is a bar weighing 39 ounces worth?

34. If 17 yards 3 qrs. of cloth cost £5 18s. 4d., how much will 32 English ells cost?

35. A man saves 3s. 4d. out of his wages per week; how long will he be in saving £50?

36. What will be the cost of 7,854 bushels of wheat at £3 4s. per quarter?

37. If 16 shirts can be made out of 56 yards of calico, how many of the same size can be made out of 119 yds.?

38. A sailor's wages are to be at the rate of £6 16s. per month; how much will he receive for a voyage of 13 weeks?

39. A tradesman's debts amount to £1,354 10s., and he can only pay 12s. 6d. in the pound; what are his assets?

40. What will be the rent of 39 acres 2 roods 20 perches at £3 15s. per acre?

41. If I lend a friend £1,800 for 4 months, how long ought he to lend me £450 to repay the loan?

42. A stone wall is built by 20 men in 48 days; in what time could 32 men build a similar wall?

43. If 12 men can reap a field of 60 acres in 5 days, how many acres could 15 men reap in the same time?

44. How much tea at 5s. per lb. must be given for 3 cwt. 2 qrs. 4 lbs. of coffee at 1s. 3d. per lb.?

45. What is the cost of 5 lbs. of sugar if 2 cwt. 2 qrs. cost £7?

46. How many ounces of tea can I buy for 10s. 3¾d. if 16 lbs. 8 oz. cost £4 2s. 6d.?

47. If 5½ doz. of chairs cost £49 10s., what do 6 cost?

48. If 20 yards 3 qrs. of calico cost 10s. 4½d., what quantity can be bought for £2 11s. 10½d.?

49. 20 men built a wall 48 yards 1 ft. long in 7 days 3 hours, how many yards did they build in 3 days?

50. A tub of butter weighing 1 cwt. 2 qrs. cost £7 10s. 6d., what was that for 7 lbs.?

51. Bought 17 pigs for £61 14s., and afterwards sold them at the rate of £11 17s. for 3; did I gain or lose, and how much (1) per pig, and (2) on the whole transaction?

52. How long will a person, walking at the rate of 11 miles in 3 hours, be in travelling 29 miles?

53. How many yards of oil-cloth, 1½ yard wide, will it take to cover a hall floor, 16 yards long, and 2¼ yards wide?

54. A railway train travels at the rate of 63 miles in 2¼ hours, what distance does it travel in 13 hours, supposing its rate to be uniform?

55. A grocer buys 2 cwt. 3 qrs. 12 lbs. of raisins for £8 13s. 4d., at what must he sell them per lb. so as to gain ¾d. per lb.?

56. If 6 engines can pump up 525 gallons of water in a certain time, how many would it take to pump up 8,150 gallons in the same time?

57. A person lent me £150 for 8 months; how long ought I to lend him £100 as an equivalent?

58. If 17 cwt. 3 qrs. 7 lbs. cost £35, how much can be bought for £14?

59. If 21 men eat 70s. worth of bread in a certain time when wheat is 12s. a bushel, what worth of bread will they eat, in the same time, when wheat is 7s. a bushel?

60. A field was mown by 50 men in 10 days of 12 hours each; in how many days of the same length would it be mown by 20 men?

61. If 17 English ells 3 qrs. can be purchased for £13 15s., how much must be paid for 9 yards?

62. What will 16 gals. of wine cost if 24 gals. cost £45?

63. How much silk may be bought for £255, if 123 yards cost £205?

64. What is the cost of 19 bar. 24 gals. 3 qts. of beer if 3 qts. cost 10½d.?

65. If the tax upon £858 16s. 6d. is £1 7s., what would be the tax upon £604 7s. 2d.?

66. In how many days will 48 guineas be spent at the rate of 84s. in 3 days?

67. If the rent of a field of 24 acres is £24 18s. 6d., what would be the rent of one of 56 acres of the same kind?

68. What will 2 cwt. 2 qrs. 10 lbs. cost, if 3 cwt. 1 qr. cost £61 9s. 1d.?

69. How much wheat can be bought for £55 0s. 3d. at the rate of £2 14s. 4d. for 4 bushels?

70. If £51 be paid for 10 cwt. 2 qrs. 14 lbs. of sugar, what would be the cost of 2 cwt. 21 lbs.?

71. Required the price of 450 lbs. if 2 lbs. cost 4s. 8½d.?

72. If 21s. will buy 12 lbs. of tobacco, how much will £1 15s. 10½d. buy?

73. If £90 10s. laid out in the funds entitles me to receive £3 10s. a year, what income should I receive from laying out £1,000 in the same manner?

74. If beer be 6s. 9d. per dozen bottles, how many can be bought for £8 12s. 1½d.?

75. What must I give for 2 cwt. 2 qrs. 13 lbs. of corn, if I pay £43 13s. 1½d. for 86 cwt. 1 qr. 9 lbs.?

76. If a field of 20 acres produce 550 bushels of corn, how much is that upon every 33 square yards?

77. What must be given for 50 pieces of cloth, each containing 25 yards at £2 11s. 3d. for 3 yards?

78. If a field contain sufficient pasture for 9 oxen 28 days, how many oxen would it serve 36 days?

79. A person buys 272 yards of cloth for £300, and retails it at £1 17s. per yard, what does he gain by the transaction?

80. If a servant's wages are £50 a year, what should he receive for 1 year 146 days?

81. If a person earn £191 12s. 6d. in one year, in what time does he earn £15 15s.?

82. Required the price of 8 cwt. 2 qrs. 9 lbs. when 2 lbs. cost 7s. 10½d.

83. If 3 yards 1 qr. 2 nls. cost 5s. 3d., how much will 36 yards 3 qrs. cost at the same rate?

84. If a person walk 100 miles in 7 days of 8 hours each, in how many days of the same length could he walk 214 miles?

85. If the carriage of 1 cwt. 3 qrs. 7 lbs. for 100 miles come to 18s. 5¼d., what ought to be charged for the carriage of 5 tons 1 cwt. 2 qrs. for the same distance?

86. I lent a friend £125 for 12 months; for how long should he lend me £75 that the two loans might be equal?

87. A poor-rate of 4s. 1½d. in the £ is levied on the rental of a parish, and produces £528; what is the rental?

88. How much land worth 30s. per acre should be given in exchange for 243 ac. 32 p. worth 35s. per acre?

89. Bought 66 cwt. 1 qr. 9 lbs. of coals for £48 3s. 8d.; how much is that for 51 cwt. 2 qrs. 14 lbs.?

90. If 12 men perform a piece of work in 32 days, how many men could do it in one-fourth part of the time?

91. Bought 5 bales of cotton, each containing 120 lbs. at 7½d. per lb., and 12 bales, each containing 150 lbs. at 8d. per lb., and sold the whole at an average price of 8½d. per lb.; what was the total gain?

92. A cotton merchant bought 1,290 lbs. of cotton for £48 7s. 6d.; at what rate must he sell 27 lbs. so as to gain 1½d. per lb.?

93. The total rents of a parish amount to £1,250, and a poor-rate of £75 15s. is required; what will a tenant have to pay whose rent is £20 per annum?

94. I exchange 150 lbs. of tea worth 4s. 2d. per lb. for sugar worth 5d. per lb.; how much sugar ought I to receive?

95. Bought 136 yards of Irish linen at the rate of 4s. 7½d. for 3 yards, and afterwards sold the whole at the rate of 5 yards for 8s. 6½d.; what was the gain per English ell?

96. A farmer borrowed 16 quarters of wheat of a neighbour when wheat was 72s. per quarter, and when he returned it wheat had fallen to 64s. per quarter; what quantity ought he to have returned?

97. Bought 340 yards of broad cloth at the rate of £2 0s. 6d. for 3 yards; but 25 yards being completely spoiled, at what rate per yard must I sell the remainder so as to neither gain nor lose?

98. If £1,290 10s. gain £64 10s. 6d. interest in 12 months, what sum will gain £162 10s. 9d. in the same time?

99. Bought 35 bales of cotton, each containing 98 lbs., at the rate of 2s. 8½d. for 5 lbs.; what did the whole cost?

100. A wall 78 ft. long and 6 ft. high is built by 12 men in 16 days; how long will it take 4 men to build a similar wall?

101. A merchant owes debts to the amount of £22,500, and he is worth only £15,000; how much can he pay his creditors in the pound?

102. A man has an income of £350 per annum, and he lays by £120; what is his expenditure for 3 days?

103. Bought 640 yards of calico for £11 6s. 8d., and sold the whole again at 4½d. per yard; did I gain or lose, and how much?

104. If 3 chests of tea, each weighing 25 lbs. 4 oz., cost £13 5s. 1½d., how much will 14 lbs. 12 oz. cost?

105. If 100 lbs. of lead ore from a certain mine yield 78 lbs. of pure lead, what quantity of lead will 17 tons 4 cwt. 3 qrs. of ore from the same mine yield?

106. If wheat is sold at £1 11s. 6d. for 3 bushels 2 pecks, what quantity may be bought for £143 11s.?

107. There are two establishments, one in London and the other in Manchester, and each of them consumes

145 tons 12 cwt. of coal in the year: the price per ton in London is 25s. 6d., and in Manchester 11s. 8d.; how much more does it cost the London establishment than the Manchester one for coals in 7 months?

108. A piece of work is performed by 12 men in 17 days; how long will it take 6 men and 6 boys to perform the same work, supposing the work of two boys is equal to that of one man?

109. A wine merchant bought 3 tuns 2 hhds. 25 gals. of wine, and gave at the rate of £9 6s. 8d. for 5 gallons; what did it cost him?

110. A house rented at £39 pays in poor-rates £5 8s. 4½d., and in highway rates £1 6s.; what ought a house, rented at £52, to pay to each rate?

111. If £8,540 16s. gain £370 1s. 11¾d. in 13 months, what sum will gain £430 12s. 6d. in the same time?

112. Bought 25 pieces of cloth, each piece containing 37 yards 3 qrs. for £204 9s. 7d.; at what rate per yard must I sell it if I wish to gain £15 14s. 7d. by the whole?

113. How many yards of silk will £76 15s. buy, if 4 English ells cost £1 5s.?

114. If 16 horses consume 19 quarters 6 bushels of corn in 24 days, how long will the same quantity serve 48 horses?

115. How many hhds. of sugar, each containing 2 cwt. 1 qr., may be bought for £1,767 3s., if 1 cwt. 14 lbs. cost £2 7s. 3d.?

116. A grocer buys 11 boxes of soap, each containing 1 cwt. 1 qr. 7 lbs., and loses £3 19s. by the sale; what is the loss per cwt.?

117. If I exchange 3 cwt. 3 qrs. 27 lbs. of tea worth 4s. 4d. per lb. for sugar worth 5¾d., how much sugar ought I to receive?

118. A coal dealer's sales during the year amount to 950 tons 15 cwt. at 12s. 6d. per ton; but by means of false weights, he defrauds his customers at the rate of 1 cwt. 3 qrs. per ton; what are his *unjust* gains in the year?

119. A corn merchant bought 24 quarters 5 bushels of wheat at £2 5s. 6d. for 6 bushels, and 17 quarters 4

bushels of barley at 17s. 3d. for 3 bushels; what did the whole cost?

120. The distance between London and Edinburgh is 401 miles, and a railway train performs the first 40 miles in 1 hour 8 min. 30 sec.; in what time will it perform the whole distance, supposing its rate to be uniform?

121. Gas is charged for at the rate of 4s. 6d. per thousand feet, and a public establishment consumes 3,000 ft. in the first quarter, 1,000 ft. in the second, 4,000 in the third, and 2,000 in the fourth, what is the *average* cost per quarter?

122. Find the cost of 47 quarters 3 pecks of malt at £1 0s. 3d. for 3 bushels.

123. Bought a flock of sheep for £409 11s. 6d. and gave at the rate of £22 4s. 6d. for 7; how many sheep did the flock contain?

124. If £420 15s. gain £2 12s. 7d. in 3 months, what sum will gain £17 10s. 6d. in the same time?

125. I lent a friend £490 for 16 months, how much ought he to lend me for 11 months in return?

126. A garrison had sufficient provisions to last 1,500 men 44 days, how long would the same provisions last if the garrison were reinforced by 500 men?

127. If 18 yards of carpet 5 qrs. wide are sufficient to cover a room, how much carpet 1½ yards wide would be required for the same room?

128. A clerk is in the receipt of £3 15s. per week, what will he have to pay a year in income tax at 7d. in the pound?

129. If I spend at the rate of £16 5s. in 4 weeks, and save at the rate of £22 3s. 9d. per quarter, what is my annual income?

130. A garrison of 400 men had provisions for 30 days, but at the end of 10 days, 100 men were sent away; how long will the provisions last the remaining 300 men?

131. If the carriage of 20 tons 5 cwt. for 45 miles cost £9 12s. 6d., what will be the carriage of 45 tons 10 cwt. for the same distance?

132. A farmer's land produced one year 330 quarters

of wheat, which was sold at £3 5s. per quarter; in the following year the farmer sold his wheat at £2 15s. per quarter, and realised precisely the same sum of money as in the previous year; what quantity of wheat did his land produce the second year?

133. How much water must be mixed with 125 gallons of brandy worth £1 6s. per gallon to reduce the price to £1 2s. 6d. per gallon?

134. If 12 labourers perform a piece of work in 15 days, working 8 hours a day, how many days would they have taken if they had worked 10 hours a day?

135. A draper bought 9 pieces of cloth, each containing 30 English ells 4 qrs. for £216 11s. 3d.; at what rate must he retail it per yard to gain £35 by the purchase?

136. A bankrupt pays 10s. 8d. in the pound, and pays in all £13,067 11s. 4d.; what are his debts?

137. Bought 350 pieces of lead, each weighing 1 cwt. 7 lbs., and gave at the rate of 19s. 6d. per cwt.; what did the whole cost?

138. If the total rental of a parish amounts to £12,500, and a poor-rate of £750 12s. 6d. is required, how much will a person, whose rental is 50 guineas, have to pay?

139. A landlord abates 1½d. in the shilling to his tenants, and the total abatement amounts to £430 2s. 1d.; what is the total rental?

140. If 19 cwt. 3 qrs. of soap cost £39 3s. 5d., what must it be sold for to gain 15 per cent. profit?

141. If the 6d. loaf weighs 3 lbs. 6 oz. when wheat is £3 4s. per quarter, how much ought it to weigh when wheat is 9s. per bushel?

142. A man buys 150 yards of cloth at 13s. 7½d. for 3 yards; at what price per yard must he sell it to gain £10 by the whole?

143. Two persons part from the same place at the same time; one travels north at the rate of 135 miles in 5 days, and the other south at 110 miles in 5 days; how far will they be asunder at the end of the 12th day?

144. Bought 12 hhds. 21 gals. of foreign wine for £130 19s. 6d., and paid in duty and other expenses £180 4s.; at what rate must 12 gals. be sold to gain £45 by the whole?

145. A offers to give £1 10s. to a charitable institution for every £1 which B gives to it: B gives £15 12s. 6d.; how much will A have to give?

146. A workman's house rent is £9 12s. 6d. per annum, and he receives his wages fortnightly; what sum must he lay by every fortnight to pay his rent with?

147. A person's annual income is £450, and he wishes to lay by 12 guineas quarterly; what must he spend weekly?

148. Bought 125 bales of cotton, each weighing 2 cwt. 1 qr. for £918 15s., and sold it afterwards at a gain of 7d. in every 5 lbs.; what was the selling price of the whole?

149. If £1,250 16s. put into the bank for 73 days gain £7 10s. 1d. interest, how long will it take £500 to gain the same interest?

150. A grocer bought a quantity of coffee at £8 8s. per cwt. and sold it at the rate of £9 6s. 8d. per cwt.; he gained £11 0s. 6d. by the transaction; what quantity did he buy?

151. A draper sells goods to the amount of £1,900 15s., and gains at the rate of 6¾d. in 2s.; what are his gains during the year, supposing his bad debts amount to £27 10s. 2d.?

152. A corn-merchant bought 37 quarters of wheat for £100 16s. 6d., and sold 7 quarters at a profit of 2s. 6d. per quarter; how much did he receive for the 7 quarters?

153. If 250 yards of carpet, 1¼ yards wide, can be made for £29 13s. 9d., how many yards of the same width and quality can be made for £1 16s. 10½d.?

154. The erection of 175 yards of brickwork cost £10 11s. 5½d.; if 17 yards more at the same rate be added, what will be the entire cost?

155. If the penny loaf weighed 8 oz. 2 dr. when wheat was 54s. per quarter, what was the price per quarter when the penny loaf weighed only 5 oz. 8 dr.

156. A wine merchant mixes 49 gals. of wine, worth 18s. 6d. per gal., with 84 gals. worth 21s. 6d. per gal.; what is the value per gal. of the mixture?

157. In measuring a road of 119 miles an error, averaging 19 yds. 2 ft. in 5 miles, is made; what is the total error?

158. A grocer bought 120 lbs. of tea at 4s. 4d. per lb.; 145 lbs. at 2s. 10d.; and 130 lbs. at 3s. 4d.; what is the average cost of 9 lbs.? and, supposing he sold the whole at an average price of 3s. 9d. per lb., what was the total selling price and the total gain?

159. A piece of work was to be done by 16 men in 8 days, but 7 of them left before the work was begun; how long will it take the remainder to perform it?

160. In selling 20 tons 2 qrs. of lead, at the rate of 1s. 5½d. for 14 lbs., I lost £46 14s. 6d.; what was the prime cost per lb.?

161. Bought 54 lbs. of ginger at 2s. per lb., and sold one-third of it at the rate of 3½d. for 2 oz.; at what price per oz. must the remainder be sold that the gain on the whole may be 30s.?

162. How many yards of calico at 4¾d. per yard ought I to receive for 7 pieces of Irish linen, each piece containing 37 yards, and worth 1s. 11½d. per yard?

163. How many English ells of linen may be bought for £162 10s. if 19 yards cost £2 1s. 2d.?

164. A bankrupt pays his creditors 2s. 7½d. in the pound, and his total payments amount to £750 10s. 6d.; what are his debts?

165. Between the flash of lightning and the report of the thunder there is an interval of 5½ seconds; what is the distance of the thunder cloud, sound travelling at the rate of 1,142 ft. per second?

166. If a walking-stick 3 ft. 4 in. long, projects, when standing perpendicularly, a shadow of 3 ft. 6 in., what is the height of a tower which at the same time projects a shadow of 63 ft. 9 in.?

167. A man has an income of £1,095 per annum, and his expenses are at the rate of £2 10s. per day; in what time will he save £750?

168. If an income of £149 10s. is taxed at the rate of 5d. in the pound, how much clear income will remain after the tax is paid?

169. If a gentleman spend £76 5s. every week, what

must be his daily income, that in 5 years he may lay by £2,507 10s.?

170. If a tradesman buy 200 yards of cloth at the rate of 5s. for 2 yards, and 225 yards at 5s. for 3 yards, what will he gain or lose by selling the whole at the rate of 10s. for 5 yards?

171. If in purchasing an estate I pay £100 for every £3 10s. of the rental, how much should an estate cost which produces a rental of £1,860 10s. a year?

172. Five men, who weave at the rate of 8 yards 3 qrs. per day, finish 238 yards in a certain time; at what rate must they weave to finish 340 yards in the same time?

173. If A has travelled 30 miles before B sets out after him, and if for every 12 miles travelled by A, B travels 16 miles, what distance will each have travelled before A is overtaken?

174. Two coaches start from London to York, one at 8 o'clock the other at 10 o'clock; the former travels at the rate of 6½ miles an hour, and the latter at 8 miles an hour; in what time will the latter overtake the former?

175. A bankrupt's property amounted to £2,500; he paid £350 of his debts in full, and paid the remainder at the rate of 7s. 6d. in the pound; how much did his debts amount to?

176. If 45 shilling loaves are made out of a quarter of wheat, what should be the price of the loaf when 60 are made out of the same quantity?

177. A fortress is supplied with 92,000lbs., of bread, and contains 1,400 men, who consume each 10 lbs. per week; how long will the provision last?

178. A railway train has to perform a journey of 250 miles in 8 hours, but at the end of 4½ hours only one-half the distance has been accomplished; at what rate per hour must the other half be run so as to accomplish the whole distance in the given time?

179. Bought 70 English ells 2 qrs. of cloth for £29 3s.; how many pieces, each containing 39½ yards, can be bought for £105 11s. 5¼d.?

180. A person imported 3 cwt. 1 qr. 12 lbs. of tobacco,

for which he paid the foreign merchant £24 1s. 6d., and also paid 2s. 2½d. per lb. duty; what ought he to charge per packet of 3½ lbs. that he may make a clear profit of £7 16s. 8d.?

181. If an acre of land is 110 yards long and 44 yards broad, what must be its length when the breadth is 27 ft. 6 in.?

182. If a hogshead of spirits is worth £45 8s. 6d., how much water must be added so that it may be worth only 11s. 6d. a gallon?

183. If a land tax of 3s. 3d. in the pound is payable upon an estate worth £3,360 a year, what is the clear annual value of the estate?

184. If I spend 12 guineas in 49 days, and save £80 a year, what must be my annual income?

185. A man's daily income is £1 12s. 6d., and his quarterly expenditure is £127 10s.; how much will he have saved at the end of 10 years?

186. A garrison has provisions enough to last 3,000 soldiers 5 months; how many must be sent away in order that there may be sufficient to last 8 months?

187. If a bankrupt's estate has paid 3 dividends of 5s. 6d., 4s. 7½d., and 3s. 2d. in the pound, what do his creditors lose upon his entire debts of £5,460 10s.?

188. If a clerk has a salary of £75 10s. a year, commencing 1st February, how much should he receive on leaving his employment on the evening of the 6th September following?

189. If £95 is sufficient to discharge a debt of £100 due a year hence, how much will discharge a debt of £850 10s. 6d. due also a year hence?

190. A man owes £3,074 7s. 8d., but can only pay £1,921 9s. 2d.; how much shall I receive in the pound on a debt of £500?

191. If the net income of an estate, after paying all the taxes, is £1,069 10s., and the gross income is £1,140 16s., how much in the pound do the taxes amount to?

192. A fortress has provisions for 9 weeks at the rate of 14 oz. 8 dr. per day for each man; at what rate must they be distributed so that they may last 12 weeks?

193. If a man has an income of £1,355 12s. 6d., and pays a tax of 7d. in the pound, how much will he have after the tax is paid?

194. A person buys 100 yards of cloth at 2s. a yard, and 200 yards at 3s. a yard; what will he gain or lose by selling the whole at 2s. 9d. per yard?

195. If iron is worth 7s. 11d. for 19 lbs., what is the worth of 1 cwt. 2 qrs. 8 lbs.?

196. How many dozen pairs of gloves at 1s. 6d. a pair should be given in exchange for 12 dozen at 3s. 9d.?

197. If 6 horses subsist on a certain quantity of hay for 4 weeks 2 days, how long would the same quantity last 20 horses?

198. If an income tax of 7d. in the pound produce a revenue of £2,240,000, how much in the pound must it be to produce £3,200,000?

199. If wages are regulated by the price of wheat, and a labourer earns 1s. 9d. per day when wheat is 8s. per bushel, what ought he to earn when wheat is 48s. per quarter?

200. If 500 men, walking 4 abreast, extend 325 paces, to what distance will they reach if they march 20 abreast?

201. A piece of work is performed by 18 men in 42 days; how long would it take 28 men to perform double the quantity of work?

202. If a person's annual income is 500 guineas, how much would he save in a year after spending £5 6s. 10¾d. a week?

203. How much beef may be bought for £158 1s. 8½d., if 27 cwt. 17 lbs. cost £82 7s. 2½d?

204. If a board be 3 ft. 9 in. broad, what must be its length that it may be equal to another board which is 7 ft. 6 in. broad, and 37 ft. 9 in. long?

205. A vintner bought 160 gals. of wine for £105 10s., and, after adding 15 gals. of water to it, he sold the whole at the rate of £2 12s. 9d. for 3 gals.; what was his total gain?

206. If 9 English degrees are equivalent to 10 French degrees, how many English degrees and minutes will there be in 327 French degrees?

207. If when malt is 63s. a quarter a quart of ale costs 4½d., what should be the price of malt when a barrel of ale costs £2 11s.

208. A wine merchant has 100 gals. of wine which are worth £81; find what quantity of water he must add to it that it may be worth 12s. a gallon?

209. If 1,000 sovereigns contain 21 lbs. 5 oz. 16 dwt. 6 gr. of gold, what weight of gold is there in 128 sovereigns?

210. A baker sells 1,211 (so called) four-pound loaves a week, and his weekly receipts amount to £30 5s. 6d. By means of false scales, however, he gives but 14¾ oz. to the lb.; of how much does he defraud a working man's family in 12 weeks if they spend 5s. 6d. weekly in bread?

211. If 55 acres of land worth £3,877 10s. be exchanged for 77 acres 2 roods of other land, what is the value per acre of the latter?

212. The carriage of 89 tons 15 cwt. for 120 miles costs £4 9s. 9d., what will be the carriage of 29 tons 15 cwt. for the same distance?

213. Bought 435 gals. of brandy for £529 5s., and lost, by leakage, 13 gals.; for what must I sell 12 gals. of the remainder, so as neither to gain nor lose by it?

214. A bankrupt had good debts owing him to the amount of £590 10s., and the following bad debts: £720 15s., and £345, for which he receives respectively 12s. and 8s. 4d. in the £; his liabilities are £1,500; how much can he pay in the £?

215. A man has an income of £320 a year, upon which an income tax of 7d. in the £ is charged; but a duty of 1s. 8d. per lb. is taken off tea; how much tea must his family consume that he may just save his income tax?

216. If 5 men can mow a field of 20 acres in 8 days, how many men can mow another field that is 363 yards long and 160 yards broad in the same time?

217. A ship's crew of 36 men have provision for 10 weeks; how long will it last if 9 additional sailors are taken on?

218. Bought 126 yards of broad cloth at the rate of

£2 16s. 3d. for 2½ yards, and afterwards had the whole made into coats containing 2 yards each, the trimming of which cost me £5 15s., and the workmanship £23 2s. I then sold the coats at £3 7s. 6d. each; how much did I gain by the transaction?

219. The interest obtained by putting £1,500 10s. into the bank for 11 months is £49 10s.; what sum ought to gain £106 6s. 8d. in the same time?

220. A garrison of 1,600 men contains provisions for 7 weeks; how many must be sent away that the provisions may last 10 weeks?

221. The population of a country increased in 10 years from 12,000,000 to 13,500,000; what would be the population at the end of another 10 years, supposing it increased at the same rate?

222. A cistern which holds 800 gals. has two taps; water runs through one of them at the rate of 70 gals. an hour, *into* the cistern, and through the other the water runs *out of* it at the rate of 50 gals. an hour; in what time will the cistern be filled?

223. A family consists of 5 persons, all of whom are employed; their total earnings per week are £5 18s. 1½d.; what are the average receipts of each from the 4th of March to the 4th of May, inclusive?

224. Three persons, A, B, and C, earn respectively 21s., 24s., and 27s. per week; what are their *total* earnings, and their *average* earnings for 7 weeks 5 days?

225. A regiment consisting of 950 men and 50 officers is to be clothed; the average cost of a private's suit is £3 19s. 6d., and the suits of 2 officers cost as much as the suits of 5 privates; find the total cost.

226. A grazier exchanges 120 sheep worth £3 15s. each for cows worth £15 each; how many cows does he receive?

227. A farmer exchanges a piece of land 156 yards long and 30 yards broad for another piece which is 45 yards broad; what must be the length of the piece which he receives in exchange?

228. In carpeting a floor I used 76 yards of carpet 3 qrs. wide; how many yards should I have used if the width had been 1¼ yards?

229. What sum of money will produce as much interest in 9 months as £580 10s. will in 2½ years?

230. A gentleman has an income of £2,500 a year, and he spends at the rate of £63 a week; does he save or run in debt, and how much in the year?

231. Bought 16 quarters 3 bushels of wheat at the rate of 6s. 8d. per bushel, and 25 quarters 5 bushels of barley, 5 bushels of which were equal in value to 3 bushels of wheat; what was the total cost?

232. A school of 260 scholars contains 3 boys for every 2 girls; how many scholars are there of each sex?

233. A trench 39 yards long, 5 yards wide, and 3 yards deep is dug by 18 men in 15 days; in what time would it have been dug if 6 more men had been employed?

234. A grocer bought 7 cwt. 2 qrs. 7 lbs. of sugar for £14 2s. 4d., and sells it in parcels of 5 lbs. each; at what rate per parcel must he sell it so as to gain £1 10s. 6d. by the whole?

235. A bankrupt has in cash £9,600, and a debt of £500 due to him, for which he receives only 15s. in the £; he pays his creditors at the rate of 8s. in the £; what are his debts?

236. If 1,664 oz. of silver are to be made into table spoons, each weighing 3 oz. 4 dwts., how many dozens will be made, and what will be the cost of the whole, at 7s. 6d. per oz., supposing no loss of metal in the manufacture.

237. The four pound loaf costs 6d. when wheat is 1s. 3d. per peck; what ought it to cost when a quarter of wheat is worth £3 6s. 8d.?

238. If a cistern can be filled in 3 hours by a pipe that lets in 5 gals. per minute, in what time would it be filled by one that lets in 420 gals. per hour?

239. How many yards of paper ½ yard wide would cover the walls of a room 54 ft. round and 10 ft. high, of which the windows and door occupy 90 square feet?

240. If a tradesman buy 74 yards of cloth at 5s. 3d. per yard, at what rate per yard must he retail it so as to gain £6 6s. 5d. by the whole?

241. What may a person spend daily if he has an income of £900 a year so as to lay by £334 5s. yearly?

242. A ship's crew have beef sufficient to last them

100 days at 1 lb. per head per day; how much must the daily allowance be reduced so that it may last them 160 days?

243. Two persons, A and B, agree to walk from Manchester to Liverpool, a distance of 32 miles. A left Manchester at 8 o'clock, and walked at the rate of 2½ miles an hour. B set out at 8·30, and walked 3 miles an hour; at what o'clock did B overtake A?

244. If a bankrupt pays 11s. 7½d. in the £, what would a creditor receive to whom he owed £1,367 10s.?

## COMPOUND PROPORTION.

1. If 12 men build a wall 3 yards high in 16 days, how long will it take 20 men to build a wall 5 yards high?

2. A field containing 24 acres is mown by 8 men in 12 days; how many acres could 12 men mow in 15 days?

3. The expenses of a family of 5 persons for 12 days amount to £3 15s.; what would be the expenses of another family of 9 persons for 16 days at the same rate?

4. If 24 masons earn £90 in 15 days, how much would 39 earn in 25 days?

5. How many men would be required to mow a field of 28 acres in 7 days, supposing 4 acres are mowed by 3 men in 2 days?

6. If 4 tourists spend £21 12s. in 9 days, how much would 6 spend in 16 days?

7. If 8 men pave a street 320 yards long in 15 days, how many will be required to pave another street of the same width, and 480 yards long, in 18 days?

8. A row of 6 houses was built by 24 men in 144 days; in what time could a row containing 15 similar houses be built by 32 men?

9. If, in commencing a new railway, 27 excavators dig and prepare 240 yards of the line in 20 days, in what time would 243 complete a distance of 2 miles

44 yards, supposing the ground to be of uniform difficulty?

10. What interest would £950 gain in 15 months, if £1,440 gain £60 in 10 months?

11. If, in 9 months, £60 gain 36s., in what time will £590 gain £25 11s. 4d.?

12. The carriage of 12 cwt. for 30 miles cost 12s. 6d.; now much ought to be paid for the carriage of 3 tons 45 miles?

13. What weight of goods may be conveyed 120 miles by railway for £6 10s., if the carriage of 2 tons 5 cwt. for 64 miles amount to £1 4s.?

14. A family of 14 persons consume 5 bushels 2 pecks of flour in 11 days; how long ought 8 bushels to last another family of 7 persons, supposing they eat in the same proportion?

15. The expense of keeping 16 horses for 24 days amounts to £18 4s.; what would be the expense of keeping 9 horses for 36 days?

16. A party of 6 being on an excursion spend £33 in 9 days; their number is afterwards increased to 10; how many more days could they go on travelling at the same rate of expense, supposing the total sum agreed upon to be spent is £51 6s. 8d.?

17. If 6 bricklayers build a wall 18 yards long in 3 days of 9 hours each, how many would be required to build another wall of the same height and thickness, but 33 yards long, in 9 days of 11 hours each?

18. If 10 horses consume £20 worth of corn in 3 weeks, when corn is 5s. per bushel, what will it cost to keep 16 horses for 63 days when corn is worth 5s. 6d. per bushel?

19. If the fourpenny loaf weighs 2 lbs. 13 oz. when wheat is worth 6s. per bushel, how much ought the sixpenny loaf to weigh when wheat is at 7s. 6d. per bushel?

20. What sum will gain £42 in 8 months, if £490 gain £24 10s. in 15 months?

21. A wall 16 yards long and 3 yards high is built by 9 men in 30 days; how long will it take 12 men to build another wall 24 yards long, and 4 yards high?

22. A contractor engages to build a wall 39 yards long in 9 days, and employs 6 men to perform the work; at the end of 4 days 24 yards are completed; how many of the men may he otherwise employ, and yet finish the work in the given time?

23. If the wages of 27 mechanics for 15 days amount to £135, how many workmen, earning the same rate of wages, may be employed 25 days for £200?

24. If 120 yards of gas piping are laid down by 5 men in 8 days, how many men will be required to lay down 4 times the quantity of piping in one-half the time?

25. If 3 compositors set up a work of 70 pages of 36 lines in a page and 40 letters in a line, in 28 days, working 10 hours a day, how many would set up a work of 120 pages of 44 lines in a page and 45 letters in a line, in 20 days of 9 hours each?

26. In making a new railway, 360 cubic yards of earth are removed by 12 excavators in 6 days; how many extra men must be employed to complete the removal of 420 additional cubic yards in 4 days?

27. If 28 gals. of beer serve a family of 6 persons 28 days, how long will 34 gals. serve the same family when reduced to 4 persons?

28. If 8 men mow a field 144 yards long by 121 yards broad in 10 days, in what time will 12 men mow a field of 3 acres?

29. If the carriage of 10 tons for 111 miles cost £4 12s. 6d., how far may 5 tons be carried for 6s. 8d.?

30. If 16 sappers and miners survey the county of Durham, which contains 1,100 square miles, in 280 days, how long will it take a body of 40 men to survey the whole of England and Wales which contain 58,000 square miles?

31. The expense of maintaining a charity school of 140 pupils is £4,270 per annum; what would be the expense of maintaining a similar school of 120 pupils for 3 months, when the expenses of board and management are 10 per cent. less?

32. If 30 cannon consume 250 barrels of powder in 4 days, how much will be spent in 12 days by 150 cannon?

33. A partnership is formed consisting of 5 persons, each of whom contributes £250 to the general stock; at the end of 12 months the total profits amount to £90; how many persons, each contributing £300, ought to join in order to realize a total profit of £180 in 4 months?

34. In working a coal-mine, 12 colliers obtain 96 tons of coal in 4 days; in what time would 8 colliers obtain £72 worth of coal from the same mine, supposing it to be worth 6s. per ton?

35. If five needlewomen make 6 shirts in 4 days of 12 hours each, how long will it take 4 needlewomen to make 17 shirts, working 8½ hours per day?

36. A railway contractor engaged to finish 3 miles of a railroad in 170 days, but after employing 80 men for 90 days, he found that a distance of only 1,800 yards was completed; how many additional men must he engage in order that the work may be finished within the given time?

37. If I borrow £300 for 8 months when money is worth 5 per cent. how much ought I to lend in return for 15 months when money is worth 3 per cent.

38. If 9 men can mow a field, whose length is 630 ft. and breadth 420 ft., in 1½ days, working 12 hours a day, how many hours a day must 6 men work to mow another field 1,080 ft. long by 840 ft. broad in 7½ days?

39. A wall 30 ft. long has to be built in 15 days; and 18 ft. of it are completed by 6 men in 12 days; how many men will be required to finish the remainder within the given time?

40. If beer which is brewed with 12 pecks of malt to 36 gals. cost 13d. per gal. when malt is 70s. per quarter, how much will the gal. of beer cost when brewed with 4 pecks to 18 gals., the price of malt being 64s. per quarter?

41. A person sells me a quantity of goods worth, in ready money, £5 10s., but I am charged £6 for them, and allowed 6 months' credit. In return I sell the same person goods worth, in ready money £4 19s., and allow him the same credit. What should I charge for the goods to make the transaction equitable?

42. A garrison of 820 men have a store of 167 cwt. 1 qr. 18 lbs. of provisions, and they consume in 15 days 55 cwt. 3 qrs. 6 lbs.; how many extra men could be received into the garrison, and the provisions last at the same rate of consumption, 5 more days?

43. Sixteen men engage to pave a street 735 yards long by 10 yards broad in 150 days, working 8 hours per day. At the end of 100 days the men had performed exactly 100 days' portion of the work, and then 4 of them were taken ill. In how many days of 12 hours each would the remainder complete the work?

44. There are 60 men employed in the construction of a wall 200 yards long, which they can complete in 15 weeks, but at the end of 6 weeks 20 workmen are withdrawn; how many yards will be unfinished at the end of the 15 weeks, and how long will it take the remaining workmen to complete the wall?

45. If 35 bales of cotton, each weighing 120 lbs., cost 100 guineas, what will 20 bales of an inferior quality, each weighing 130 lbs., cost, supposing 8 lbs. of the former to be worth 12 lbs. of the latter?

46. 144 men make 2 miles of sewers, 18 ft. deep, in 300 days of 10 hours each; how many men would it require to make the same sewers 2 ft. deeper in the same number of days, but working 8 hours daily instead of 10?

47. 8 men plant a field of 10 acres with potatoes, in rows of 10 inches apart, in 30 days of 12 hours each; how many men would be required to plant a field of 15 acres, in rows 15 inches apart, in 40 days of 9 hours each?

48. A traveller completes a journey of 656 miles in 8 days, travelling 3 hours a day; how long would he be going a journey of 984 miles, travelling 4 hours daily?

49. If 500,000 bricks, 9 inches long, 4½ inches wide, and 4 inches thick, be required to build a music hall, how many would be required 10 inches long, 5 inches wide, and 4½ inches thick?

50. The cost of papering a room, with paper ¾ of a yard wide at 5½d. a yard, is £2 18s. 6d.; what would

it cost if the paper were a yard wide, and charged 8½d. a yard?

51. A block of stone, 8 ft. long, 5 ft. thick, and 3 ft. wide, weighs 3 tons 5 cwt.; what would be the weight of a block 9 ft. long, 7 ft. thick, and 3 ft. wide.

52. In a cotton factory, allowing that 150 weavers, with 300 old looms, can produce 6,000 yards of calico in 2 days of 10 hours long; how many yards would 200 weavers produce from 400 looms of a new construction, each doing one-third more work than the old, in 3 days of 8 hours long?

53. If 20 cows produce £250 worth of cheese in a summer of 3 months long, when cheese sells for 9½d. per lb., what worth of cheese would 35 Alderney cows produce, each being one third more productive than the ordinary cows, in a summer of 4 months long, when cheese sells for 10¼d. per lb.?

54. If a town of 30,000 inhabitants uses on an average £50 worth of ink per annum, what is the value of the ink used in the United Kingdom in 5 years, taking the rate of use as the same, and the population at 26,362,000?

55. If a miller, with 8 pairs of steam-driven stones, can grind 2,000 measures of wheat weekly, when his mill goes night and day, how many measures would he grind if 2 pairs of stones were taken off, the steam displaced by water-power at half the speed, and the mill driven for only 10 hours daily?

56. If a fleet of 20 ships, averaging 34 common guns each, can throw 20,000 shots an hour, how many shots might be fired from 27 ships armed with an average of 39 breech-loading guns each, that can fire three times to the common gun once?

57. If an army of 20,000 men, during a European campaign of 3 months, loses one-fifth of its number from sickness and exposure, how many men would be lost from similar causes in an army of 45,000 men, during a 4 months' campaign in India, where the casualties from the same causes are as 5 to 2 compared with Europe?

## GREATEST COMMON MEASURE.

Find the greatest common measure of:—

1. 288 and 648
2. 384—1296
3. 1778—1722
4. 1729—1950
5. 3924—3048
6. 918—5238
7. 1500—6780
8. 2272—3552
9. 2585—4081
10. 3705—4845
11. 2376—2592
12. 5824—7488
13. 4242—2626
14. 2178—3114
15. 910—380
16. 1131—3393
17. 3256—3052
18. 378—1582
19. 3584—5376
20. 2304—4032
21. 2882—2056
22. 3672—7992
23. 7455—47223
24. 45096—58200
25. 78204—74480
26. 31671 and 35073
27. 10650—16614
28. 58104—44944
29. 21600—83176
30. 41370—72030
31. 70070—73920
32. 12125—9375
33. 4032—4608
34. 12321—54345
35. 7755—12243
36. 16012—28112
37. 7410—9790
38. 12882—20566
39. 9504—10368
40. 26120—37440
41. 27334—28372
42. 14455—14896
43. 22100—71602
44. 54528—89856
45. 37775—61215
46. 32, 48—280
47. 56, 18—322
48. 48, 144—720
49. 4446, 4712—5301
50. 81, 729—8748

## LEAST COMMON MULTIPLE.

Find the least common multiple of :—

1. 5, 15, 10, 21
2. 8, 19, 16, 40
3. 14, 42, 63, 91
4. 16, 19, 29, 32
5. 10, 30, 55, 120
6. 12, 19, 17, 18
7. 15, 19, 14, 13, 17
8. 24, 36, 60, 180, 368
9. 12, 18, 96, 132, 144
10. 15, 55, 95, 125, 10

11. 13, 15, 26, 30, 49.
12. 16, 64, 13, 12, 28.
13. 17, 102, 51, 96, 12.
14. 34, 29, 42, 68, 26.
15. 86, 94, 39, 85, 96.
16. 39, 49, 85, 19, 33.
17. 87, 51, 93, 16, 48.
18. 56, 72, 96, 160,200.
19. 85, 100, 55, 75, 125.
20. 148, 49, 98, 37, 86.
21. 841, 96, 72, 84, 150.
22. 91, 182, 74, 36, 54.
23. 18, 15, 19, 36, 57.
24. 16, 48, 64, 128, 39.
25. 93, 81, 94, 162, 53.
26. 64, 72, 96, 224, 252.
27. 40, 320, 80, 200, 20.
28. 54, 27, 71, 54, 108.
29. 92, 46, 23, 69, 192.
30. 56, 98, 112, 91, 98.
31. 72, 36, 144, 96, 84.
32. 121, 88, 66, 55, 44.
33. 81, 63, 108, 180, 63.
34. 52, 65, 91, 39, 78.
35. 28, 70, 98, 112, 140.
36. 16, 72, 81, 39, 8.
37. 54, 102, 120, 90, 18.
38. 77, 40, 88, 50, 108.
39. 18, 90, 45, 23, 17.
40. 16, 48, 80, 96, 32.
41. 34, 85, 102, 51, 68.
42. 24, 39, 85, 60, 15.
43. 12, 84, 120, 132, 156.
44. 18, 63, 90, 108, 72.
45. 50, 25, 150, 25, 75.
46. 44, 11, 99, 110, 55.
47. 72, 90, 126, 108, 45.
48. 84, 126, 210, 294, 42.
49. 153, 204, 102, 1020
50. 91, 455, 1820, 1001.

## VULGAR FRACTIONS.

### CASE 1.—*Reduce to their lowest terms* :—

1. $\frac{116}{174}$; $\frac{240}{1584}$.
2. $\frac{1728}{1872}$; $\frac{292}{657}$.
3. $\frac{772}{1351}$; $\frac{1804}{2134}$.
4. $\frac{847}{1188}$; $\frac{564}{1278}$.
5. $\frac{1050}{8450}$; $\frac{2698}{13561}$.
6. $\frac{1177}{13910}$; $\frac{1023}{2354}$.
7. $\frac{756}{1063}$; $\frac{1313}{2727}$.
8. $\frac{348}{600}$; $\frac{963}{1917}$.
9. $\frac{1296}{3636}$; $\frac{2712}{3948}$.
10. $\frac{2144}{2948}$; $\frac{1392}{4232}$.
11. $\frac{4746}{5085}$; $\frac{413}{1121}$.
12. $\frac{4272}{9256}$; $\frac{1062}{2242}$.
13. $\frac{6776}{14520}$; $\frac{16303}{31523}$.
14. $\frac{142857}{999999}$; $\frac{964194}{1139502}$.
15. $\frac{684}{11172}$; $\frac{1256}{2669}$.
16. $\frac{27832}{95424}$; $\frac{284234}{683698}$.
17. $\frac{428730}{1457682}$; $\frac{6439}{8083}$.
18. $\frac{2572404}{6002276}$; $\frac{39168}{329472}$.
19. $\frac{2304}{4032}$; $\frac{2056}{2882}$
20. $\frac{3672}{7992}$; $\frac{7455}{47215}$
21. $\frac{45096}{58200}$; $\frac{74480}{72204}$
22. $\frac{31671}{35073}$; $\frac{10650}{16014}$
23. $\frac{44944}{58104}$; $\frac{21600}{83170}$
24. $\frac{41370}{72030}$; $\frac{70070}{73920}$
25. $\frac{9375}{12125}$; $\frac{4032}{4608}$
26. $\frac{12321}{54345}$; $\frac{7755}{12243}$
27. $\frac{16012}{28112}$; $\frac{7410}{9790}$
28. $\frac{12882}{20500}$; $\frac{9504}{10368}$
29. $\frac{26120}{37440}$; $\frac{27304}{28372}$
30. $\frac{14455}{14890}$; $\frac{22100}{71002}$

### Case 2.—*Reduce to improper fractions* :—

1. $5\frac{1}{7}$; $8\frac{3}{4}$.
2. $9\frac{2}{7}$; $16\frac{8}{14}$.
3. $25\frac{9}{11}$; $14\frac{11}{12}$.
4. $15\frac{8}{14}$; $72\frac{1}{9}$.
5. $85\frac{6}{17}$; $56\frac{13}{22}$
6. $13\frac{4}{5}$; $27\frac{2}{9}$.
7. $19\frac{3}{4}$; $22\frac{1}{5}$.
8. $100\frac{19}{59}$; $378\frac{1}{3}$.
9. $435\frac{11}{16}$; $183\frac{5}{21}$.
10. $514\frac{5}{16}$; $499\frac{3}{5}$.
11. $67\frac{34}{57}$; $35\frac{13}{16}$.
12. $32\frac{2}{9}$; $653\frac{3}{19}$.
13. $127\frac{4}{17}$; $120\frac{433}{514}$.
14. $514\frac{3}{16}$; $200\frac{19}{59}$.
15. $514\frac{5}{16}$; $415\frac{11}{16}$.
16. $1000\frac{19}{59}$; $381\frac{5}{63}$.
17. $7218\frac{87}{1514}$; $435\frac{11}{16}$.
18. $1209\frac{187}{514}$; $4734\frac{57}{95}$.
19. $176\frac{81}{120}$; $5\frac{1847}{6978}$
20. $56\frac{73}{126}$; $841\frac{31}{70}$
21. $124\frac{23}{666}$; $67\frac{81}{470}$
22. $7444\frac{51}{88}$; $34\frac{810}{965}$
23. $15961\frac{8}{15}$; $37\frac{84}{99}$
24. $37\frac{1644}{3929}$; $591\frac{8}{9}$
25. $156\frac{162}{851}$; $58\frac{6}{8}$
26. $7648\frac{672}{847}$; $98\frac{3}{5}$
27. $156\frac{327}{969}$; $591\frac{84}{93}$
28. $973\frac{51}{87}$; $62\frac{127}{391}$
29. $58\frac{748}{939}$; $1\frac{6734}{51980}$
30. $8417\frac{51}{87}$; $5\frac{7964}{9871}$

### Case 3.—*Reduce to whole or mixed numbers* :—

1. $\frac{9}{3}$; $\frac{8}{2}$.
2. $\frac{16}{4}$; $\frac{18}{3}$.
3. $\frac{15}{7}$; $\frac{24}{5}$.
4. $\frac{39}{8}$; $\frac{58}{11}$.
5. $\frac{96}{16}$; $\frac{17}{3}$.
6. $\frac{196}{4}$; $\frac{872}{13}$.
7. $\frac{651}{7}$; $\frac{213}{95}$.
8. $\frac{247}{12}$; $\frac{476}{17}$.
9. $\frac{1245}{22}$; $\frac{5907}{25}$.
10. $\frac{621613}{514}$; $\frac{542}{22}$.
11. $\frac{4483}{35}$; $\frac{871871}{1000}$.
12. $\frac{801507}{6135}$; $\frac{1245}{22}$.
13. $\frac{8227}{16}$; $\frac{3848}{21}$.
14. $\frac{5919}{59}$; $\frac{7321}{16}$.
15. $\frac{7628}{34}$; $\frac{5329}{327}$.
16. $\frac{876}{57}$; $\frac{3927}{37}$.
17. $\frac{6428}{87}$; $\frac{591}{18}$.
18. $\frac{3546}{628}$; $\frac{7219}{5}$.
19. $\frac{726}{31}$; $\frac{9467}{18}$
20. $\frac{5678}{3}$; $\frac{8370}{819}$
21. $\frac{57643}{93}$; $\frac{2371}{827}$
22. $\frac{6513}{274}$; $\frac{87461}{392}$
23. $\frac{97641}{394}$; $\frac{1896}{274}$
24. $\frac{5476}{3914}$; $\frac{65342}{29874}$
25. $\frac{16213}{27}$; $\frac{4871}{3871}$
26. $\frac{24613}{704}$; $\frac{4843}{729}$
27. $\frac{1641}{374}$; $\frac{86641}{\text{[illegible]}39}$
28. $\frac{7247}{6134}$; $\frac{85721}{65843}$
29. $\frac{4218}{713}$; $\frac{56413}{1742}$
30. $\frac{5184}{374}$; $\frac{61728}{5941}$

### Case 4. *Reduce to their simplest form* :—

1. $\frac{3}{7}$ of $\frac{5}{11}$; $\frac{6}{8}$ of $\frac{5}{7}$.
2. $\frac{3}{9}$ of $\frac{2}{5}$; $\frac{8}{7}$ of $\frac{6}{14}$.
3. $\frac{9}{10}$ of $\frac{7}{16}$; $\frac{7}{6}$ of $\frac{17}{19}$.
4. $\frac{6}{15}$ of $\frac{4}{8}$; $\frac{3}{8}$ of $\frac{8}{9}$.
5. $\frac{16}{45}$ of $\frac{63}{20}$; $\frac{24}{216}$ of $9\frac{3}{4}$.
6. $\frac{3}{100}$ of $12\frac{6}{7}$; $\frac{28}{40}$ of $10\frac{1}{2}$.
7. $\frac{3}{4}$ of $\frac{7}{6}$ of $8\frac{3}{4}$.
8. $\frac{1}{4}$ of $\frac{6}{13}$ of $\frac{1}{8}$ of $13\frac{1}{8}$.
9. $\frac{7}{16}$ of $\frac{3}{10}$ of $4\frac{2}{7}$ of 1.
10. $\frac{3}{5}$ of $\frac{1}{16}$ of $\frac{5}{4}$ of 10.
11. $\frac{7}{8}$ of $\frac{8}{7}$ of $\frac{1}{9}$ of $\frac{2}{1}$.
12. $\frac{7}{16}$ of $\frac{3}{10}$ of $4\frac{2}{7}$.
13. $\frac{8}{9}$ of $\frac{7}{24}$ of 36 of $\frac{10}{11}$.
14. $\frac{5}{8}$ of $\frac{3}{13}$ of $6\frac{8}{19}$ of $2\frac{2}{3}$.
15. $\frac{4}{5}$ of $\frac{7}{8}$ of $10\frac{1}{2}$ of 8.
16. 1 of $\frac{3}{7}$ of 5 of $\frac{3}{4}$.
17. $3\frac{1}{2}$ of $5\frac{1}{4}$ of $7\frac{1}{8}$.
18. $\frac{5}{9}$ of 6 of $3\frac{1}{4}$.

19. $5$ of $17\frac{1}{4}$ of $3\frac{7}{8}$ of $4$
20. $9\frac{1}{4}$ of $\frac{13}{7}$ of $127$ of $\frac{1}{4}$
21. $5\frac{7}{8}$ of $\frac{2}{9}$ of $17\frac{1}{4}$ of $\frac{4}{7}$
22. $68\frac{3}{7}$ of $59\frac{1}{8}$ of $564$
23. $7$ of $\frac{3}{8}$ of $\frac{12}{19}$ of $14$
24. $16$ of $\frac{18}{321}$ of $54$ of $\frac{7}{18}$
25. $11$ of $\frac{417}{844}$ of $\frac{3}{4}$ of $\frac{9}{10}$
26. $15$ of $\frac{9}{10}$ of $3\frac{1}{4}$ of $6$
27. $847$ of $\frac{3}{7}$ of $\frac{8}{9}$ of $\frac{1}{4}$
28. $\frac{1}{4}$ of $\frac{74}{91}$ of $\frac{120}{341}$ of $19$
29. $\frac{1}{5}$ of $\frac{11}{19}$ of $37548$
30. $\frac{7}{9}$ of $\frac{9}{4}$ of $\frac{67318}{2776}$

**CASE 5.**—*Reduce to their least common denominator:*—

1. $\frac{2}{3}, \frac{5}{8}, \frac{3}{7}$.
2. $\frac{5}{6}, \frac{4}{15}, \frac{6}{8}$.
3. $\frac{3}{8}, \frac{5}{16}, \frac{4}{15}, \frac{9}{14}$.
4. $\frac{1}{2}$ of $\frac{3}{4}, \frac{2}{3}, \frac{3}{5}$.
5. $\frac{4}{5}, \frac{5}{7}, \frac{12}{13}, \frac{16}{17}$.
6. $\frac{3}{4}, \frac{5}{8}, \frac{11}{12}$.
7. $\frac{4}{9}, \frac{5}{8}, \frac{5}{6}, \frac{3}{4}$.
8. $\frac{5}{7}, \frac{2}{3}, \frac{5}{9}, \frac{13}{14}$.
9. $\frac{3}{4}, \frac{7}{10}, \frac{11}{12}$,
10. $\frac{11}{12}, \frac{3}{14}, \frac{5}{16}$.
11. $\frac{1}{2}, \frac{2}{3}, \frac{5}{7}, \frac{8}{9}$.
12. $\frac{4}{5}, \frac{5}{7}, \frac{12}{15}, \frac{16}{17}$.
13. $\frac{1}{2}$ of $\frac{3}{4}, \frac{2}{3}, \frac{3}{5}$.
14. $\frac{4}{10}, \frac{8}{15}, \frac{5}{9}, \frac{7}{10}$.
15. $\frac{1}{7}, \frac{3}{8}, \frac{8}{18}, \frac{22}{72}$.
16. $1\frac{11}{12}, \frac{7}{8}, \frac{11}{16}, \frac{17}{24}$.
17. $\frac{4}{4}, \frac{6}{11}$ of $\frac{12}{15}$ of $7\frac{1}{4}$.
18. $\frac{7}{11}, 4\frac{1}{2}, \frac{2}{33}, 7\frac{3}{8}$.
19. $\frac{10}{15}, \frac{5}{6}, \frac{21}{28}, \frac{11}{24}$.
20. $\frac{3}{4}, \frac{13}{36}, \frac{7}{16}, \frac{9}{25}$.
21. $\frac{2}{3}, \frac{15}{12}, \frac{4}{9}, \frac{6}{15}$.
22. $\frac{7}{12}, \frac{5}{6}, \frac{19}{16}, \frac{17}{24}$.
23. $\frac{11}{13}, \frac{15}{16}, \frac{9}{11}, \frac{5}{7}$.
24. $\frac{7}{8}, \frac{4}{6}, \frac{9}{10}, \frac{6}{7}$.
25. $\frac{3}{4}, \frac{5}{8}, \frac{7}{12}$.
26. $\frac{3}{8}, \frac{71}{4}, \frac{603}{28}, \frac{287}{40}$.
27. $\frac{4}{105}, \frac{171}{470}, \frac{612}{717}, \frac{128}{93}$.
28. $\frac{15}{17}, \frac{31}{51}, \frac{64}{102}, \frac{7}{13}$
29. $\frac{5}{11}, \frac{17}{150}, \frac{14}{99}, \frac{3}{75}$
30. $\frac{160}{381}, \frac{29}{127}, \frac{54}{254}, \frac{17}{20}$
31. $\frac{57}{84}, \frac{67}{168}, \frac{59}{42}, \frac{3}{21}$
32. $\frac{72}{84}, \frac{39}{58}, \frac{17}{42}, \frac{12}{29}$
33. $\frac{23}{184}, \frac{39}{192}, \frac{15}{46}, \frac{19}{23}$
34. $\frac{69}{820}, \frac{154}{1640}, \frac{29}{410}, \frac{12}{41}$
35. $\frac{76}{311}, \frac{64}{622}, \frac{91}{207}, \frac{3}{27}$
36. $\frac{72}{84}, \frac{340}{2270}, \frac{64}{454}, \frac{12}{277}$
37. $\frac{510}{3764}, \frac{22}{1882}, \frac{94}{941}, \frac{27}{39}$
38. $\frac{261}{374}, \frac{642}{748}, \frac{61}{187}, \frac{52}{54}$
39. $\frac{42}{310}, \frac{74}{155}, \frac{64}{89}, \frac{21}{31}$
40. $\frac{292}{846}, \frac{32}{282}, \frac{91}{141}, \frac{72}{316}$

## ADDITION.

1. $\frac{4}{9}+\frac{3}{5}+\frac{6}{7}$.
2. $\frac{3}{5}+\frac{7}{8}+\frac{9}{2}$.
3. $\frac{2}{5}+\frac{4}{7}+\frac{9}{2}$.
4. $\frac{26}{7}+\frac{35}{8}+\frac{2}{5}$.
5. $\frac{2}{7}+\frac{5}{8}+\frac{13}{4}$.
6. $\frac{5}{11}+\frac{3}{14}+\frac{13}{9}$.
7. $\frac{2}{7}+\frac{15}{30}+\frac{3}{4}$.
8. $\frac{8}{15}+\frac{13}{42}+\frac{1}{8}$.
9. $\frac{49}{30}+\frac{62}{56}+\frac{8}{11}$.
10. $\frac{27}{16}+\frac{7}{9}+\frac{6}{15}$.
11. $\frac{2}{7}+\frac{8}{21}+\frac{3}{14}+\frac{5}{108}$.
12. $\frac{6}{4}+\frac{8}{6}+\frac{7}{8}+\frac{9}{10}$.
13. $16+\frac{3}{8}+\frac{17}{15}+\frac{13}{24}$.
14. $\frac{52}{365}+\frac{12}{13}+\frac{4}{7}+9\frac{11}{13}$.
15. $\frac{121}{191}+25\frac{11}{16}+4\frac{19}{20}+\frac{4}{75}$.
16. $4\frac{4}{9}+1\frac{1}{32}+5\frac{1}{3}+\frac{19}{20}$.
17. $6\frac{7}{8}$ of $\frac{9}{10}+\frac{4}{14}+7\frac{1}{2}$.
18. $133\frac{44}{40}+124\frac{9}{32}+54\frac{18}{112}$.
19. $9\frac{21}{22}+10\frac{11}{15}+32\frac{111}{88}$.
20. $91\frac{27}{84}+147\frac{181}{336}+63\frac{517}{672}$.
21. $166+\frac{1}{2}+\frac{6}{7}+\frac{9}{10}$.
22. $\frac{9}{10}$ of $6\frac{7}{8}+\frac{4}{7}$ of $\frac{1}{2}+7\frac{1}{2}$.

23. $\frac{5}{6}$ of $\frac{1}{2}+\frac{7}{8}+\frac{14}{15}+\frac{13}{27}$.
24. $6+9\frac{1}{4}+8+11\frac{1}{3}$.
25. $6\frac{3}{11}+51\frac{3}{4}+14\frac{1}{3}+\frac{7}{8}$.
26. $\frac{4}{5}+\frac{2}{5}$ of $\frac{1}{3}+9\frac{3}{20}$.
27. $\frac{5}{7}+\frac{3}{5}+6\frac{2}{3}$.
28. $1\frac{3}{7}+14\frac{1}{3}+\frac{9}{10}+\frac{7}{8}$.
29. $\frac{12}{35}+\frac{18}{15}+\frac{6}{7}+\frac{1}{12}$.
30. $1\frac{1}{2}+2+\frac{2}{3}+3\frac{3}{4}$.
31. $8\frac{1}{4}+3\frac{7}{8}+5\frac{1}{7}+8+\frac{3}{4}$
32. $67+\frac{5}{11}+3\frac{7}{9}+8\frac{1}{2}+\frac{9}{11}$
33. $54+\frac{1}{9}+\frac{8}{19}+5\frac{1}{7}+9\frac{1}{4}$
34. $9\frac{1}{2}+\frac{7}{8}+\frac{9}{10}+5\frac{1}{6}+\frac{3}{4}$
35. $8\frac{5}{7}+\frac{3}{7}+\frac{5}{6}+\frac{8}{11}+\frac{3}{5}$
36. $\frac{9}{10}+\frac{5}{7}+\frac{6}{13}+\frac{5}{8}+2$
37. $8\frac{1}{3}+5\frac{1}{4}+6\frac{1}{2}+7\frac{1}{4}+\frac{3}{4}$
38. $7\frac{1}{2}+3\frac{1}{3}+1\frac{7}{8}+6\frac{1}{5}+9\frac{1}{2}$
39. $5\frac{1}{2}+3\frac{1}{7}+8\frac{1}{9}+6\frac{1}{5}+3\frac{1}{9}$
40. $8+\frac{3}{8}+\frac{6}{7}+\frac{1}{8}+\frac{5}{7}$
41. $9\frac{1}{2}+3\frac{1}{7}+\frac{1}{3}+\frac{7}{17}+\frac{1}{9}$
42. $5\frac{1}{4}+7\frac{3}{7}+5\frac{7}{11}+6\frac{3}{7}+5$
43. $\frac{7}{11}+\frac{3}{4}+\frac{6}{7}+3\frac{1}{7}+\frac{5}{8}$
44. $\frac{3}{4}+5\frac{1}{7}+6\frac{1}{8}+7\frac{1}{9}+8\frac{1}{10}$
45. $9\frac{1}{2}+10\frac{3}{4}+5\frac{1}{6}+8\frac{1}{7}+6$
46. $8\frac{1}{2}+9\frac{1}{4}+\frac{3}{7}+\frac{5}{8}+\frac{9}{11}$

## SUBTRACTION.

1. $\frac{5}{6}-\frac{1}{6}$; $\frac{3}{4}-\frac{5}{9}$.
2. $\frac{7}{12}-\frac{5}{12}$; $\frac{3}{13}-\frac{4}{39}$.
3. $\frac{7}{13}-\frac{5}{12}$; $\frac{6}{7}-\frac{3}{8}$.
4. $\frac{1}{2}-\frac{1}{3}$; $\frac{2}{3}-\frac{5}{9}$.
5. $\frac{7}{8}-\frac{3}{4}$; $\frac{11}{12}-\frac{2}{5}$.
6. $\frac{5}{6}-\frac{5}{7}$; $\frac{3}{5}-\frac{4}{7}$.
7. $\frac{4}{5}-\frac{5}{12}$; $\frac{24}{25}-\frac{15}{49}$.
8. $\frac{7}{9}-\frac{2}{3}$; $169-14\frac{3}{7}$.
9. $214\frac{1}{4}-\frac{38}{3}$; $15-\frac{3}{7}$.
10. $13\frac{7}{8}-4\frac{4}{5}$; $\frac{3}{4}-\frac{2}{35}$.
11. $2\frac{2}{3}-1\frac{4}{6}$.
12. $\frac{3}{5}$ of $4-\frac{2}{7}$ of 3.
13. $5\frac{3}{8}-\frac{2}{7}$ of $4\frac{1}{6}$.
14. $14\frac{1}{2}-\frac{2}{3}$ of 19.
15. $1\frac{5}{14}-\frac{4}{7}$ of $\frac{1}{6}$ of 7.
16. $\frac{2}{3}$ of $19-7$.
17. $19\frac{5}{11}-\frac{7}{15}$; $13\frac{1}{9}-9\frac{15}{27}$.
18. $12\frac{3}{8}-9\frac{5}{6}$; $16\frac{2}{3}-7\frac{4}{5}$.
19. $\frac{19}{20}-\frac{2}{21}$; $71\frac{1}{2}-\frac{17}{19}$.
20. $194\frac{1}{21}-100\frac{1}{31}$.
21. $13\frac{1}{3}-3\frac{7}{9}$; $11\frac{7}{24}-8\frac{8}{18}$.
22. $30\frac{8}{11}-8\frac{5}{7}$; $3\frac{3}{22}-2\frac{8}{13}$.
23. $7\frac{8}{14}-6\frac{1}{2}$; $14\frac{1}{3}-7\frac{3}{11}$.
24. $8\frac{1}{2}+\frac{3}{4}+5\frac{1}{6}-7\frac{8}{18}$.
25. $7+\frac{5}{6}+\frac{11}{12}+7\frac{3}{4}-12\frac{19}{34}$.
26. $5\frac{1}{4}-2\frac{7}{9}-8\frac{7}{8}-6\frac{11}{12}+14\frac{1}{6}$.
27. $7\frac{1}{2}+1\frac{8}{9}+\frac{11}{3}+\frac{11}{15}-6\frac{3}{4}-2\frac{1}{9}$
28. $\frac{1}{2}$ of $\frac{5}{6}$ of $11\frac{1}{4}-\frac{3}{4}$ of 6 of $\frac{15}{18}$
29. $5+7\frac{1}{4}+\frac{3}{8}+1-8\frac{5}{12}$.
30. $8\frac{1}{2}-\frac{1}{4}$ of $6-3\frac{1}{7}$ of $5+29$.
31. $5-\frac{3}{4}-\frac{5}{7}+\frac{8}{9}+\frac{3}{5}$
32. $\frac{6}{7}+\frac{3}{4}+\frac{5}{1}-\frac{1}{3}$ of $\frac{7}{8}$
33. $\frac{5}{4}$ of $7\frac{3}{4}-\frac{3}{9}$ of $\frac{2}{4}$ of 2
34. $\frac{6}{10}$ of $\frac{3}{7}$ of $14-\frac{3}{5}$ of $\frac{1}{9}$ of 3
35. $\frac{4}{7}+\frac{3}{8}+\frac{3}{7}-\frac{2}{11}+\frac{23}{13}$
36. $\frac{3}{5}-\frac{2}{9}$ of $\frac{6}{7}$ of $\frac{1}{4}$ of 2
37. $\frac{8}{17}+3\frac{1}{9}+5-\frac{3}{16}$ of 4
38. $\frac{11}{12}+\frac{3}{13}+\frac{1}{9}-\frac{8}{17}$ of $\frac{2}{3}$
39. $\frac{6}{7}+\frac{3}{4}-\frac{1}{2}+\frac{1}{7}$ of $\frac{5}{6}$
40. $10\frac{1}{2}+19\frac{3}{4}-\frac{6}{8}-\frac{3}{5}-\frac{1}{3}$
41. $8\frac{1}{2}+9\frac{1}{4}+6\frac{1}{2}-8\frac{1}{7}-3$
42. $167-\frac{1}{3}$ of $\frac{2}{7}$ of $\frac{6}{8}$ of $\frac{3}{13}$
43. $\frac{6}{19}$ of $\frac{3}{14}$ of $\frac{8}{11}-\frac{1}{9}$ of $\frac{1}{14}$
44. $846+\frac{1}{9}-\frac{3}{7}$ of $\frac{1}{2}$ of 8
45. $728-\frac{3}{4}-\frac{1}{7}-\frac{3}{5}-\frac{1}{3}$
46. $654-(\frac{3}{7}+\frac{5}{6}+\frac{3}{4})$

## MULTIPLICATION.

1. $\frac{3}{7}\times\frac{11}{15}$; $\frac{5}{8}\times\frac{4}{7}$.
2. $\frac{7}{9}\times\frac{2}{3}$; $\frac{7}{9}\times\frac{3}{4}$.
3. $\frac{1}{2}\times\frac{1}{2}$; $\frac{3}{4}\times\frac{3}{4}$.
4. $\frac{1}{4}\times\frac{1}{4}$; $\frac{2}{7}\times\frac{5}{8}$.
5. $\frac{4}{15}\times\frac{5}{24}$; $4\frac{5}{8}\times\frac{2}{3}$.
6. $17\frac{4}{5}\times6\frac{3}{4}$; $48\frac{3}{5}\times13\frac{5}{6}$.
7. $430\frac{6}{10}\times18\frac{3}{7}$; $\frac{8}{9}\times\frac{3}{12}$.
8. $\frac{15}{50}\times\frac{9}{30}$; $\frac{12}{3}\times5$.
19. $\frac{10}{18}\times\frac{6}{7}$; $\frac{6}{45}\times\frac{115}{40}$.
10. $42\frac{3}{10}\times\frac{20}{12}$; $71\frac{15}{16}\times3\frac{7}{8}$.
11. $\frac{4}{9}$ of $6\frac{1}{2}\times\frac{3}{7}$ of 9.
12. $\frac{1}{4}\times\frac{3}{8}+\frac{5}{7}$.
13. $\frac{9}{10}\times\frac{2}{3}\times\frac{3}{4}\times\frac{5}{6}$.
14. $\frac{3}{4}\times\frac{2}{5}\times\frac{2}{3}\times\frac{1}{3}$.
15. $7\frac{2}{3}\times\frac{25}{1}$.
16. $\frac{1}{2}\times\frac{3}{4}\times\frac{5}{6}\times\frac{7}{8}\times\frac{9}{10}$.
17. $6\times\frac{2}{3}$ of $\frac{3}{5}$.
18. $\frac{2}{9}$ of $\frac{3}{5}\times\frac{5}{8}$ of $3\frac{2}{7}$.
19. $3\frac{2}{7}\times4\frac{14}{33}$.
20. $5\times\frac{2}{3}\times\frac{2}{7}$ of $\frac{3}{5}\times4\frac{1}{6}$.
21. $19\frac{4}{7}\times23\frac{9}{11}$.
22. $8\frac{3}{4}\times10\frac{4}{5}$.
23. $\frac{3}{4}$ of $\frac{5}{6}\times\frac{4}{5}$ of $\frac{6}{11}$.
24. $2\frac{6}{17}\times\frac{4}{5}$ of $\frac{8}{9}$.
25. $71\frac{15}{18}\times3\frac{7}{8}$.
26. $12\frac{3}{5}\times\frac{2}{6}$ of 7.
27. $\frac{1}{3}$ of $\frac{4}{5}\times\frac{7}{10}$ of $\frac{11}{12}$.
28. $\frac{4}{5}$ of $91\times71\frac{1}{2}$.
29. $\frac{3}{4}$ of $\frac{1}{7}\times18\frac{4}{5}$.
30. $20\frac{1}{4}\times20\frac{4}{9}\times25\frac{9}{13}$.
31. $8\frac{1}{4}\times5\frac{1}{2}\times6\frac{1}{4}\times8\frac{1}{7}\times3$
32. $7\frac{1}{2}\times5\frac{1}{7}\times8\frac{1}{2}\times5\frac{1}{4}\times\frac{5}{9}$
33. $3\frac{1}{2}\times\frac{6}{7}\times\frac{5}{13}\times\frac{6}{8}\times5$
34. $9\times\frac{2}{7}\times\frac{3}{11}\times\frac{6}{7}\times9$
35. $5\frac{1}{4}\times\frac{3}{7}\times\frac{8}{11}\times\frac{3}{7}\times12$
36. $6\frac{1}{7}\times5\frac{1}{3}\times\frac{8}{9}\times5\times3$
37. $5\frac{1}{2}\times3\frac{1}{7}\times\frac{8}{17}\times\frac{3}{4}\times\frac{1}{9}$
38. $\frac{1}{5}\times\frac{3}{8}\times5\frac{1}{5}\times\frac{3}{10}\times5$
39. $11\times\frac{5}{6}\times\frac{3}{7}\times\frac{2}{11}\times8\frac{1}{3}$
40. $3\frac{1}{7}\times1\frac{5}{7}\times6\frac{1}{7}\times8\frac{1}{4}\times\frac{1}{5}$
41. $5\frac{1}{2}\times3\frac{1}{7}\times8\frac{1}{6}\times9\times\frac{1}{4}$
42. $6\frac{1}{4}\times3\frac{1}{5}\times\frac{10}{17}\times5\times\frac{3}{4}$
43. $5\frac{1}{8}\times3\frac{1}{3}\times8\frac{1}{7}\times\frac{5}{6}$ of 5
44. $9\frac{1}{2}\times3\frac{1}{4}\times5\frac{1}{6}\times\frac{3}{8}\times\frac{3}{4}$
45. $\frac{3}{7}\times\frac{8}{4}\times\frac{3}{17}\times6\frac{1}{2}\times7\frac{1}{5}$

## DIVISION.

1. $\frac{16}{25}\div\frac{3}{4}$; $\frac{12}{35}\div\frac{2}{7}$.
2. $\frac{4}{7}\div\frac{2}{3}$; $\frac{9}{20}\div\frac{3}{5}$.
3. $\frac{18}{60}\div\frac{23}{60}$; $\frac{7}{22}\div\frac{113}{355}$.
4. $\frac{13}{14}\div\frac{13}{15}$; $\frac{7}{8}\div\frac{2}{3}$.
5. $\frac{74}{128}\div\frac{128}{74}$; $\frac{3}{4}\div\frac{3}{4}$.
6. $\frac{17}{18}\div\frac{5}{9}$; $\frac{14}{15}\div\frac{7}{10}$.
7. $\frac{16}{19}\div\frac{3}{7}$; $\frac{18}{97}\div\frac{6}{13}$.
8. $\frac{25}{37}\div\frac{1}{7}$; $\frac{4}{56}\div\frac{7}{8}$.
9. $3\frac{1}{4}\div\frac{3}{4}$; $14\frac{1}{7}\div\frac{13}{16}$.
10. $92\div5\frac{1}{6}$; $5\frac{11}{12}\div\frac{45}{36}$.
11. $23\frac{1}{4}\div\frac{1}{3}$ of $\frac{13}{14}$.
12. $7\frac{1}{4}$ of $\frac{1}{4}\div18\frac{1}{8}$.
13. $1\div2\frac{38}{74}$.
14. $1\div\frac{4}{5}$.
15. $1\frac{1}{2}$ of $\frac{3}{4}\div\frac{2}{3}$ of $\frac{1}{8}$.
16. $9\frac{1}{6}\div\frac{1}{2}$ of 7.
17. $\frac{1}{2}$ of $\frac{2}{3}\div\frac{2}{3}$ of $\frac{3}{4}$.
18. $4\frac{1}{2}\div15$.

19. $25\frac{1}{2} \div 5$
20. $119\frac{1}{4} \div 8$
21. $2\frac{1}{2} \div \frac{1}{1728}$
22. $5205\frac{1}{5} \div 12$
23. $100 \div 4\frac{7}{8}$
24. $\frac{5}{6}$ of $50 \div 4\frac{1}{3}$
25. $14\frac{7}{12} \div 25$
26. $485\frac{11}{12} \div 13\frac{11}{12}$
27. $(3 - \frac{7}{8}$ of $\frac{2}{7}$ of $\frac{5}{9}) \div 7\frac{3}{14}$
28. $4853\frac{11}{12} \div 64\frac{13}{14}$
29. $5205\frac{1}{5} \div \frac{4}{5}$ of 91
30. $\frac{2}{7} \div (\frac{5}{28} \times \frac{3}{15} \times 9\frac{1}{3})$
31. $3157\frac{1}{2} \div \frac{37}{150}$ of 5
32. $6174\frac{3}{17} \div \frac{31}{176}$ of $\frac{1}{2}$
33. $8164\frac{3}{14} \div \frac{1}{5}$ of $\frac{7}{4}$
34. $7221\frac{5}{11} \div 614\frac{1}{6}$
35. $3778\frac{1}{9} \div \frac{3}{4}$ of $\frac{7}{11}$
36. $9764\frac{1}{2} \div 827\frac{3}{4}$
37. $5642\frac{3}{17} \div \frac{1}{17}$ of 67
38. $476\frac{1}{2}$ of $\frac{1}{4} \div \frac{3}{4}$ of 7
39. $72\frac{1}{2}$ of $3 \div \frac{5}{9}$ of 74
40. $562\frac{31}{96} \div 274\frac{1}{2}$
41. $67284\frac{1}{4} \div 3\frac{1}{7}$
42. $5418\frac{164}{182} \div \frac{1}{5}$ of 50
43. $51\frac{1}{2}$ of $\frac{6}{17} \div \frac{3}{4}$ of $\frac{9}{11}$
44. $334\frac{1}{6}$ of $\frac{5}{17} \div \frac{5}{8}$ of $\frac{10}{19}$
45. $5621$ of $\frac{5}{7} \div \frac{8}{17}$ of $\frac{17}{8}$
46. $7643$ of $\frac{1}{9} \div \frac{1}{16}$ of 3

CASE 6.—*Reduce to their simplest form* :—

1. $\frac{4}{5\frac{1}{4}}$; $\frac{9\frac{1}{3}}{3}$
2. $\frac{2\frac{1}{3}}{3\frac{1}{6}}$; $\frac{7\frac{1}{2}}{9\frac{5}{6}}$
3. $\frac{8}{19\frac{3}{7}}$; $\frac{4\frac{7}{8}}{11}$
4. $\frac{8\frac{4}{5}}{10\frac{5}{7}}$; $\frac{7\frac{3}{8}}{8\frac{5}{6}}$
5. $\frac{3\frac{11}{15}}{19\frac{7}{9}}$; $\frac{15\frac{2}{5}}{53}$
6. $\frac{\frac{3}{8}}{\frac{2}{1}}$; $\frac{7\frac{1}{8}}{9\frac{2}{3}}$
7. $\frac{20\frac{1}{9}}{22\frac{1}{12}}$; $\frac{\frac{5}{8}}{\frac{11}{12}}$
8. $\frac{6\frac{2}{3}}{7\frac{5}{6}}$; $\frac{6\frac{1}{4}}{9\frac{1}{5}}$
9. $\frac{6\frac{1}{4}}{7\frac{3}{14}}$; $\frac{4\frac{3}{11}}{18\frac{1}{9}}$
10. $\frac{18}{27\frac{3}{4}}$; $\frac{34\frac{5}{7}}{84}$
11. $\frac{44}{147\frac{5}{9}}$; $\frac{247}{\frac{5}{7}}$
12. $\frac{7\frac{1}{4}}{8\frac{1}{2}}$ of $\frac{3\frac{5}{7}}{4\frac{1}{3}}$
13. $\frac{5\frac{1}{4}}{7\frac{3}{7}}$ of $\frac{4\frac{1}{3}}{13}$
14. $\frac{16\frac{3}{8}}{18\frac{1}{4}}$ of 17
15. $9\frac{7}{9}$ of 8 of $\frac{\frac{1}{15}}{\frac{16}{17}}$
16. $\frac{\frac{3}{4} \text{ of } \frac{7}{12}}{\frac{19}{14}}$ of 8
17. $\frac{\frac{1}{9}}{\frac{5}{6} \text{ of } \frac{5}{9}}$ of $\frac{\frac{3}{4}}{\frac{5}{7}}$
18. $\frac{\frac{3}{5} \text{ of } \frac{6}{11}}{15}$ of $\frac{15}{\frac{3}{4} \text{ of } \frac{6}{7}}$
19. $\frac{\frac{16}{17}}{\frac{3}{15}}$ of $\frac{\frac{1}{2} \text{ of } \frac{3}{7}}{\frac{1}{4} \text{ of } \frac{1}{15}}$
20. $\frac{\frac{9}{3} \text{ of } \frac{6}{7}}{\frac{8}{7} \text{ of } \frac{3}{5}}$ of $\frac{5\frac{1}{4}}{8\frac{1}{7}}$
21. $\frac{\frac{3}{5} \text{ of } 14}{\frac{1}{9} \text{ of } 15}$ of $37\frac{1}{2}$
22. $\frac{\frac{15}{16} \text{ of } \frac{17}{14}}{\frac{9}{13} \text{ of } \frac{5}{17}}$ of $16\frac{7}{8}$
23. $\frac{5\frac{1}{4}}{8\frac{1}{9}}$ of $\frac{3\frac{7}{6}}{9\frac{3}{5}}$
24. $\frac{\frac{8}{7} \text{ of } \frac{5}{9}}{\frac{2}{16} \text{ of } \frac{1}{19}}$ of $\frac{\frac{7}{9} \text{ of } \frac{6}{8}}{5}$

CASE 7.—*Find the value of, or express in positive terms:—*

1. $\frac{3}{8}$ of a £
2. $\frac{7}{9}$ of a guinea.
3. $\frac{3}{4}$ of a half-crown.
4. $\frac{31}{40}$ of a £.
5. $\frac{13}{17}$ of a day.
6. $\frac{5}{9}$ of a lb. avoir.
7. $\frac{373}{480}$ of a £.
8. $\frac{9}{13}$ of a ton.
9. $\frac{131}{216}$ of a lb. Troy.
10. $\frac{4}{5}$ of a lb. Troy.
11. $\frac{5}{16}$ of a cwt.
12. $\frac{7}{8}$ of an acre.
13. $\frac{3}{10}$ of a day.
14. $\frac{133}{1792}$ of a cwt.
15. $\frac{149}{120}$ of a crown.
16. $\frac{40}{63}$ of a guinea.
17. $\frac{33}{56}$ of a week.
18. $\frac{61}{280}$ of a ton.
19. $\frac{4}{34}$ of a mile.
20. $\frac{3}{8}$ of $\frac{8}{17}$ of a £.
21. $\frac{277}{432}$ of a beer hhd.
22. $\frac{15}{16}$ of a cloth yard.
23. $\frac{3}{17}$ of a mile.
24. $\frac{5}{19}$ of an acre.
25. $\frac{7}{8}$ of a tun of wine.
26. $\frac{5}{9}$ of an E. ell.
27. $\frac{13}{19}$ of a moidore.
28. $\frac{3}{15}$ of a hhd. of ale.
29. $\frac{25}{26}$ of a quarter of corn
30. $\frac{9}{11}$ of 3 guineas.
31. $\frac{7}{13}$ of £15 6s. 8d.
32. $\frac{9}{19}$ of $\frac{3}{7}$ of a bushel.
33. $\frac{6}{7}$ of $\frac{3}{4}$ of a guinea.
34. $\frac{9}{11}$ of $\frac{6}{17}$ of a mile.
35. $\frac{5}{4}$ of $\frac{3}{9}$ of a ton.
36. $\frac{7}{5}$ of £100.
37. $\frac{1}{10}$ of $\frac{5}{8}$ of a moidore
38. $\frac{11}{17}$ of 9 oz. troy.
39. $\frac{3}{5}$ of $\frac{1}{7}$ of 7 bushels.
40. $\frac{3}{7}$ of $\frac{9}{14}$ of 6s. 8d.
41. $\frac{5}{9}$ of $\frac{3}{4}$ of £16 8s.
42. $\frac{2}{5}$ of $\frac{1}{10}$ of 3 tons.
43. $\frac{9}{14}$ of $\frac{1}{6}$ of 3 qrs. 5 bu.
44. $\frac{7}{12}$ of $\frac{2}{3}$ of 5 miles.
45. $\frac{3}{5}$ of $\frac{8}{9}$ of 15 cwt.
46. $\frac{24}{3}$ of $\frac{1}{9}$ of £3 6s. 4d.

## CASE 8.

| *Reduce* | *to the fraction of—* |
|---|---|
| 1. 7d. | 5s. 3d. |
| 2. 11d. | 3s. 7½d. |
| 3. 1s. 8d. | 7s. 11¼d. |
| 4. 5s. 3¾d. | 11s. 10¾d. |
| 5. £1 5s. | £3 10s. 9¼d. |
| 6. £8 4s. 7¼d. | 10 guineas. |
| 7. £2 3s. 8¾d. | £10 |
| 8. 4 guineas | £15 8s. 4d. |
| 9. 19s. 8¾d. | £1 4s. 3¼d. |
| 10. £1 5s. 9¾d. | £5 17s. 8¼d. |
| 11. 5 dwts. 19 grs. | 2 oz. |
| 12. 3oz. 2dwts. | 5oz. 19dwts. |
| 13. 2ʒ 2℈ | 1℥ 1℥ |

| *Reduce* | *to the fraction of—* |
|---|---|
| 14. 1℥ 1ʒ | 3℥ 2ʒ |
| 15. 3Fʒ 54M | 5O 19F℥ |
| 16. 5 oz. 3 drs. | 3 qrs. 12 lb. |
| 17. 8 cwt. 2 qrs. 18 lb. | a ton |
| 18. 35 lb. 7 oz. 9 drs. | a cwt. |
| 19. $\frac{1}{72}$℈ | a gr. |
| 20. 7ʒ 1℈ 15 grs. | 2℥ |
| 21. 7Fʒ 54M | 2O |
| 22. 2C 7O | 2C 6O 19F℥ |
| 23. 1$\frac{5}{6}$ of 5 miles | 145 yds. |
| 24. $\frac{3}{10}$ of 3 miles | 5$\frac{7}{8}$ fur. |
| 25. 2$\frac{2}{3}$ of 3 yds. | 3 qrs. 3 nls. |
| 26. $\frac{5}{16}$ of 3 qrs. | a yard. |

| *Reduce* | *to the fraction of* | *Reduce* | *to the fraction of* |
|---|---|---|---|
| 27. $\frac{1}{4}$ of a pole | 2 fathoms | 51. 9s. 4d. | 15s. $9\frac{3}{4}$d. |
| 28. $\frac{1}{3}$ of $\frac{1}{2}$ of 2 acres | 770 yds | 52. 17s. 8d. | 2 guineas |
| 29. 1 cu. ft. 14 in. | 3 ft. | 53. 3 qrs. 1 nl. | Fr. ell |
| 30. 5 ft. 12 in. | 1 ton of ship | 54. 1 stone 4 lbs. | 3 qrs. |
| 31. $\frac{9}{20}$ of a quire | a ream | 55. 4 oz. 19 dwts. | 5 lbs. |
| 32. $\frac{6}{14}$ of a ream | 18 quires | 56. 17 gls. 3 qts. 1 pt. | 63 gls. |
| 33. $\frac{5}{21}$ of 63 gallons | a gal. | 57. $\frac{3}{4}$ of a yard | Fr. ell |
| 34. $12\frac{14}{16}$ hhds (wine) | 46 gal. | 58. $\frac{7}{13}$ of a foot | 5 yards |
| 35. $\frac{11}{15}$ of 2 kild. | a gal. | 59. $\frac{3}{4}$ of $365\frac{1}{4}$ days | 2 years |
| 36. $\frac{15}{32}$ of a pt. | 9 gals. | 60. $\frac{3}{7}$ of 19 gal. | 1 hhd. (wine) |
| 37. 7 bu. 2 pks. | 3 qrs. | 61. $\frac{3}{7}$ of $\frac{1}{6}$ of 5 min. | 1 day |
| 38. 4 qrs. 3 bu. 1 pk. | a load | 62. $\frac{5}{9}$ of $\frac{3}{7}$ of 50 yds. | 3 miles |
| 39. 6 days 1 hr. 3′ | a week | 63. 2 po. 17 yds. | 3 acres |
| 40. 5′ 39″ | $\frac{5}{7}$ of an hour | 64. $\frac{3}{4}$ of a yd. | $\frac{3}{4}$ of 1 fur. |
| 41. $3\frac{1}{2}$ of £1 5s. 6d. | 3 gui. | 65. $\frac{1}{9}$ of an acre | $\frac{7}{8}$ of 1 sq. ml. |
| 42. $\frac{2}{9}$ of $\frac{7}{8}$ of 5s. 1d. | 16s. 8d. | 66. $\frac{3}{5}$ of 2 sq. yd. | $\frac{3}{8}$ of a pole |
| 43. $2\frac{5}{9}$ of 6s. 4d. | 18s. $7\frac{1}{2}$d. | 67. $3\frac{3}{4}$ of 5 dys. | 8 days 5 hrs. |
| 44. $6\frac{1}{2}$ of $\frac{1}{15}$ of 9 yds. | a mile | 68. $7\frac{3}{9}$ of 156 yds. | 1 ac. 3 po. |
| 45. $\frac{3}{7}$ of $\frac{4}{5}$ of 5 sq. yds. | a pole | 69. $\frac{1}{5}$ of $\frac{7}{9}$ of 2 cwt. | $\frac{3}{7}$ of 1 ton |
| 46. $\frac{9}{16}$ of £2 | 3 guineas | 70. $\frac{6}{7}$ of $\frac{3}{5}$ of 2 ft. | 2 fathoms |
| 47. $9\frac{7}{8}$ of 10 guineas | £14 | 71. $\frac{11}{12}$ of 1 pk. 1 gl. | 1 bu. 1 pk. |
| 48. £9 8s $6\frac{11}{12}$d | 14 guineas | 72. $\frac{3}{7}$ of 9s. 3d. | £1 3s. 4d. |
| 49. 3 cwt. 1 qr. $5\frac{1}{6}$ lb. | $3\frac{1}{2}$ tns. | 73. $\frac{11}{77}$ of 3 dys. | 3 dys. 7 hrs. |
| 50. 5 cwt. 3 qr. $9\frac{9}{14}$ lb. | $\frac{9}{10}$ of 3 ts. | 74. $3\frac{3}{5}$ of 2 miles | 1 lea. 1 m. |

## MISCELLANEOUS EXAMPLES.

1. $\frac{4}{5}$ of $\frac{7}{8}+\frac{2}{3}$ of $\frac{6}{7}-\frac{4}{9}$ of 2
2. $1\frac{7}{11}+8\frac{3}{7}-\frac{6}{17}+5$
3. $117\frac{1}{8}+\frac{5}{11}+4\frac{3}{4}-4$
4. $7\frac{1}{4}$ of $3\frac{1}{2}\times 6$ of $5\frac{1}{4}$
5. $(9\frac{3}{4}$ of $11\frac{1}{9}-\frac{3}{4}$ of $9)\div\frac{6}{7}$
6. $6\frac{3}{4}$ of $1\frac{3}{8}\times(15\frac{7}{12}-3\frac{1}{4}+5\frac{1}{2})$
7. $(7\frac{3}{4}+\frac{5}{17}-\frac{6}{11})\div(\frac{6}{11}-\frac{1}{19}+\frac{3}{4})$
8. $19\frac{3}{5}$ of $\frac{6}{11}$ of $14\div 31\frac{3}{15}$
9. $24\times\frac{8}{9}$ of $7+\frac{5}{6}$ of $3\times\frac{4}{15}$
10. $284\frac{3}{4}$ of $\frac{16}{19}\times(\frac{5}{9}-\frac{3}{7}-\frac{1}{15})$
11. $227\times(\frac{5}{8}$ of $\frac{3}{4}$ of $\frac{6}{11}-\frac{12}{17}$ of $\frac{1}{6})$
12. 76 of $\frac{3}{7}\times 356$ of $\frac{8}{7}$ of 5
13. $99\frac{1}{19}\div 38\frac{1}{2}$ of $\frac{60}{147}$ of 11
14. $829\frac{1}{2}$ of $\frac{3}{13}\times\frac{846}{1174}$ of 3
15. $72\frac{1}{4}-\frac{1}{7}$ of $3\div 8\frac{3}{4}$ of $\frac{19}{145}$
16. $\frac{\frac{3}{7}\text{ of }\frac{5}{6}}{\frac{1}{4}\text{ of }\frac{9}{11}}\times\frac{\frac{5}{8}\text{ of }\frac{9}{111}}{\frac{3}{7}\text{ of }\frac{5}{6}}$
17. $\frac{\frac{1}{2}\text{ of }\frac{6}{7}}{\frac{3}{4}\text{ of }\frac{1}{2}}+\frac{\frac{5}{12}\text{ of }\frac{3}{4}}{\frac{1}{9}\text{ of }\frac{7}{8}}$
18. $\frac{\frac{6}{7}\text{ of }\frac{13}{16}}{\frac{13}{16}\text{ of }\frac{18}{21}}-\frac{\frac{19}{21}\text{ of }\frac{4}{43}}{\frac{4}{45}\text{ of }\frac{9}{8}}$

19. $\dfrac{\frac{1}{4} \text{ of } 17}{\frac{1}{2} \text{ of } 15\frac{3}{13}} \div \dfrac{\frac{1}{10} \text{ of } 41\frac{1}{2}}{\frac{1}{2} \text{ of } 34\frac{1}{5}}$

20. $\dfrac{3\frac{1}{2} \text{ of } \frac{9}{11}}{15\frac{1}{4}} \times \dfrac{3\frac{7}{8} \text{ of } 1\frac{1}{2}}{1\frac{3}{8} \text{ of } 7\frac{6}{8}}$

21. $\dfrac{16\frac{4}{7} \text{ of } \frac{1}{12}}{8\frac{2}{7} \text{ of } 1\frac{1}{3}} \div \dfrac{8\frac{1}{6} \text{ of } \frac{3}{4}}{16\frac{1}{6} \text{ of } \frac{7}{18}}$

22. $\dfrac{\frac{1}{2} \text{ of } 7\frac{1}{2}}{\frac{1}{3} \text{ of } 15} - \dfrac{4\frac{3}{4} \text{ of } \frac{9}{10}}{11 \text{ of } 1\frac{1}{3}}$

23. $\dfrac{\frac{1}{2} \text{ of } 7\frac{3}{4}}{\frac{3}{4} \text{ of } \frac{1}{7}} + \dfrac{\frac{1}{4} \text{ of } \frac{1}{3}}{\frac{1}{3} \text{ of } 4\frac{3}{7}}$

24. $(\frac{5}{7} \text{ of } \frac{3}{4} \text{ of } 2 + 5 -- 3) \times \dfrac{\frac{2}{7} \text{ of } \frac{6}{11}}{4} \times 8\frac{1}{3} \text{ of } 4$

25. $(3\frac{1}{2} + \frac{5}{12} + \frac{8}{9}) \div (\frac{1}{2} \text{ of } \frac{1}{2} \text{ of } \frac{3}{11} \text{ of } \frac{5}{14})$

26. $(5\frac{1}{3} + 8\frac{1}{6} - 5\frac{1}{2}) \times (3\frac{1}{3} + 5\frac{1}{15} + 9\frac{1}{3})$

27. $(5\frac{1}{7} + \frac{8}{11} - 3\frac{1}{9} + 6\frac{3}{4} + \frac{9}{11}) \div \frac{5}{6} \text{ of } \frac{1}{8}$

28. $(\frac{10}{11} - \frac{8}{9}) \times (\frac{5}{7} + \frac{5}{8}) \times (\frac{2}{3} - \frac{1}{2})$

29. $\{(\frac{5}{7} + \frac{3}{14}) \times (\frac{6}{7} - \frac{1}{56})\} \div \frac{8}{15} \text{ of } \frac{1}{96}$

30. $\left(\dfrac{8\frac{1}{4} \text{ of } 4\frac{7}{8}}{3\frac{1}{5} \text{ of } 5\frac{6}{7}} + \dfrac{8\frac{1}{2} \text{ of } 3\frac{1}{3}}{6\frac{1}{2} \text{ of } 12\frac{1}{4}}\right) \div \dfrac{\frac{3}{7} \text{ of } \frac{1}{2}}{\frac{2}{3} \text{ of } \frac{6}{7}}$

31. If $\frac{7}{18}$ of a business are worth £1,250, what is the whole worth?

32. If 1 qr. $6\frac{2}{7}$ lbs. of bacon cost £1, what will $\frac{1}{3}$ of $3\frac{3}{4}$ of $\frac{20}{112}$ cwts. cost?

33. If a house after losing $\frac{1}{10}$ of its value by age is still worth £3,000, what is $\frac{5}{54}$ of its worth?

34. How long would it take to plough 7 acres if the work were continued for 11 hours a day at the rate of $1{,}282\frac{6}{7}$ square yards per hour?

35. How long would a coach journey of $320\frac{1}{4}$ miles take at the rate of $10\frac{1}{2}$ miles an hour?

36. How many coins, each worth $\frac{9}{20}$ of a pound, are equal to 1,944 coins, each worth $7\frac{7}{24}$ shillings?

37. In selling $20\frac{1}{10}$ tons of lead, at the rate of $1\frac{11}{24}$ shillings for $\frac{1}{160}$ of a ton, I lost £$46\frac{29}{40}$; what was the prime cost per lb.?

38. If $70\frac{2}{5}$ E. ells cost £$29\frac{3}{20}$; how many pieces, each containing $39\frac{1}{2}$ yards, can be bought for £$105\frac{551}{900}$?

39. If a journey can be performed in $40\frac{615}{952}$ days of $11\frac{9}{10}$ hours long, how long would it take when the day is $13\frac{5}{6}$ hours long?

40. If the carriage of 1 cwt. cost $\frac{378}{725}$ farthings per mile, what will $2\frac{1}{2}$ tons cost conveying $2\frac{9}{10}$ miles?

41. If 35 bales, each weighing $\frac{15}{280}$ tons, cost £105, what will 20 bales of an inferior quality cost, each weighing $\frac{13}{224}$ tons, and being only $\frac{2}{3}$ the above value per lb.?

42. What is the value of $8\frac{3}{7}$ tons of wire at £$40\frac{7}{8}$ for $2\frac{3}{14}$ tons?

43. If 2 tons of currants are worth £$124\frac{3}{20}$, what is the value of $\frac{2}{70}$ tons?

44. When $\frac{5}{14}$ of $\frac{1}{2}$ of a ton of coals can be bought for $15\frac{3}{9}$d., what is the value of a cargo of $894\frac{1}{2}$ tons?

45. If a garden produce £$58\frac{3}{7}$ worth of fruit in a good season, how much would it produce in 3 years of only $\frac{3}{8}$ as much fruitfulness?

46. If a concert costing £25, and attended by 250 people, produce a profit of £$4\frac{16}{17}$, what would be the profit of one costing £10 more, attended by $\frac{1}{5}$ more people at $\frac{1}{3}$ higher prices?

47. If a market hall yield a profit of £$69\frac{1}{3}$ annually when attended by an average of 80 people, what profit would it yield in $5\frac{5}{13}$ years, if attended by $\frac{1}{7}$ more people at $\frac{1}{6}$ higher rates?

48. If a pin mill, with 30 hands working $9\frac{1}{2}$ hours daily, produce $8\frac{3}{4}$ tons of pins in $2\frac{1}{5}$ years, what weight of pins ought to be produced by 65 hands in $5\frac{3}{5}$ years, working $9\frac{3}{4}$ hours daily, with machinery making the work $\frac{1}{19}$ more rapid than before?

49. If wrought iron work be contracted for at $2\frac{1}{4}$d. per lb., and a contract entered into at that price for $5\frac{3}{4}$ tons of work, but, iron and wages rising immediately after the contract is signed, the whole work has to be done at 15 per cent. increase in the price of iron, and 10 per cent. rise in the wages, iron forming $\frac{2}{3}$ of the whole cost, and wages $\frac{1}{4}$; what will the contractor lose by these changes?

50. Just as a builder has made his estimate for a building at £300,000 timber falls 5 per cent., wages go up $\frac{3}{15}$, and bricks $\frac{1}{19}$, and allowing that timber was originally estimated as $\frac{1}{4}$, wages $\frac{1}{3}$, and bricks $\frac{1}{3}$ of the entire cost, to what sum must he alter his estimate?

51. Multiply £5 8s. $6\frac{3}{4}$d. by $\frac{11}{84}$, and divide the result by 5 ($\frac{3}{7} \div \frac{3}{5}$ of $\frac{1}{9}$).

52. What is the result of dividing £100 by $5\left(\frac{\frac{1}{2} \text{ of } \frac{7}{9}}{\frac{2}{3} \text{ of } \frac{1}{4}} - \frac{\frac{3}{5} \text{ of } \frac{1}{6}}{\frac{5}{8} \text{ of } \frac{1}{7}}\right)$?

53. What is the result of dividing £5 8s. $4\frac{7}{10}$d. by $\frac{1}{5}$ of $\frac{3}{7}$ of 2?

54. Simplify $\frac{\frac{3}{4} \text{ of } \frac{7}{8}}{\frac{5}{9} \text{ of } 6\frac{1}{4}} \div \left(\frac{\frac{7}{12} \text{ of } 8\frac{8}{13}}{3}\right) + 8\frac{5}{9}$ of 6.

55. How many pieces of cheese, each 1 oz. $1\frac{7}{9}$ dr., in a whole one, weighing 16 lbs. 5 oz. $14\frac{3}{7}$ drs.?

56. If $\frac{3}{5}$ of a boat are worth £90 7s. $6\frac{1}{7}$d., and improvements be made adding $\frac{1}{9}$ to the whole value, what is then the value of $\frac{1}{8}$ of the boat?

57. What fraction of a furlong is equal to $\frac{1}{16}$ of $\frac{3}{20}$ of a mile?

58. If $\frac{5}{9}$ tons are purchased for £18 16s. $9\frac{5}{9}$d., what is the value of 16 cwt. 3 qrs. 1 lb. $9\frac{1}{5}$ oz.?

59. If a canal $3\frac{1}{4}$ miles long, $60\frac{1}{5}$ ft. wide, and $14\frac{1}{3}$ ft. deep, be dug by 119 men in $4\frac{1}{8}$ years, working $10\frac{1}{2}$ hours daily, how long will it take 150 men to dig a canal $4\frac{1}{7}$ miles long, $19\frac{7}{8}$ft. wide, $12\frac{1}{3}$ ft. deep, working $9\frac{3}{4}$ hours daily?

60. 6 bricklayers, and a boy doing $\frac{2}{3}$ of a man's work, build 6 cottages in $49\frac{1}{2}$ days, working $10\frac{1}{3}$ hours daily, how long would 5 men, and 2 boys similar to the first, take to build 15 similar cottages, working $14\frac{1}{3}$ hours daily?

61. A person having £9 8s. 7d., gives $\frac{1}{50}$ of it to each of 8 old men, $\frac{1}{60}$ to each of 9 old women, and spends $\frac{1}{19}$ of the remainder on sweetmeats for 6 boys; how much has he left?

62. A father left £2,000 to be divided amongst his three sons and his widow, the first son to have $\frac{2}{3}$ of $\frac{1}{9}$ of the whole, the second twice as much as the first, the third 5 guineas less than the second, and the widow the remainder: how much did each receive?

63. Express the sum of $\frac{1}{3}$ of 7s. $4\frac{1}{2}$d., $\frac{1}{2}$ of 9s. $6\frac{3}{4}$d., and $\frac{1}{12}$ of £7 as the fraction of $5\frac{1}{3}$ guineas.

64. If an iron gunboat cost £60,000 building, $\frac{1}{3}$ as much fitting, and $\frac{1}{8}$ as much storing, what would a fleet of 60 such boats cost, 5 per cent. being saved on the above cost in the building, $\frac{13}{64}$ in the fitting, and $\frac{4}{19}$ in the storing?

65. If $\frac{1}{7}$ of 84 railway shares be worth £81 6s. $9\frac{1}{7}$d., what is the value of 2 shares?

66. Find the quotient of £150 $\div \dfrac{\frac{3}{7} \text{ of } \frac{6}{11}}{5}$.

67. What number divided by $84\frac{7}{12}$ will give $91\frac{5}{19}$?

68. A foundry employing 300 men, working full time, yields a profit of £$10\frac{1}{9}$ per man per year, what will be the total profit per year when $\frac{1}{4}$ of the men are discharged, and the rest work $\frac{2}{3}$ time, prices having gone down so as to reduce the profit $4\frac{1}{2}$ per cent.?

69. If a town burning 300 public lamps at £1 15s. 8d. each for cost of gas per year, improve its gas so as to do with $\frac{1}{9}$ less lamps, and cheapen its mode of gas making by $\frac{1}{8}$, what will be the yearly saving?

70. What will be the dividend if the divisor be $89\frac{1}{14}$ and the quotient $735\frac{11}{17}$?

## DECIMAL FRACTIONS.

### FINITE DECIMALS.

CASE 1.—*Express as Decimal Fractions* :—

1. $\frac{1}{2}$; $\frac{1}{4}$
2. $\frac{1}{10}$; $\frac{1}{5}$
3. $\frac{3}{20}$; $\frac{7}{100}$
4. $\frac{3}{25}$; $\frac{7}{8}$
5. $\frac{31}{32}$; $\frac{49}{125}$
6. $\frac{9}{16}$; $\frac{19}{40}$
7. $3\frac{3}{4}$; $9\frac{11}{16}$
8. $5\frac{7}{16}$; $16\frac{3}{5}$
9. $22\frac{9}{25}$; $3\frac{14}{70}$
10. $5\frac{11}{20}$; $20\frac{33}{625}$
11. $9\frac{37}{40}$; $2\frac{19}{250}$
12. $10\frac{15}{16}$; $11\frac{11}{320}$
13. $\frac{1}{4}$ of $\frac{2}{5}$
14. $\frac{7}{16}$ of $\frac{3}{5}$
15. $\frac{16}{25}$ of $\frac{1}{20}$
16. $7\frac{3}{250}$ of $19\frac{1}{2}$
17. $25\frac{5}{32}$ of $12\frac{17}{80}$
18. $9\frac{7}{100}$ of $4\frac{9}{160}$

### Case 2.—*Express as Vulgar Fractions :—*

1. ·5 ; ·25
2. ·75 ; ·12
3. ·4 ; ·15
4. ·475 ; ·875
5. ·96875 ; ·74
6. ·5625 ; ·08
7. ·84375 ; ·828125
8. 5·7 ; 5·1
9. 3·75 ; 16·6
10. 9·6875 ; 22·36
11. 7·1875 ; 6·25
12. 3·2125 ; 18·28125
13. 5·55 ; 20·0528
14. 9·925 ; 2·07422875
15. 10·9375 ; 11·034375
16. 12·4296875 ; 4·76
17. 19·8125 ; 3·2
18. 25·15625

### Addition of Decimals.

1. 3·45 + 2·55 + 6·44 + 18·2 + 78·28 + 4·12
2. 9·75 + 84·16 + 54·98 + 19·12 + 18·64 + 25·5
3. 85·19 + 7·984 + 15·485 + 7·65 + 99·495 + 64·2
4. 77·255 + 195·642 + 78·915 + 63·956 + 12·99 + 8·45
5. 47·05 + 64·6 + 849 + 29·002 + ·658 + 84·15 + 846
6. 756·002 + 93·5 + 563 + 394·596 + 72·45 + 53·18 + 12
7. 84·294 + 50·0075 + 29·2 + 598·17 + 23·185 + 7·009
8. 359·45 + 63·259 + 34·36 + 49·395 + 645·2 + 99·35
9. 8·59 + ·05 + 79·16 + ·008 + 20·3 + 59·165 + ·0075
10. 16·49 + 39·18 + ·5 + 17·285 + 150·49 + ·0004 + 8·29
11. 25·84 + 594 + 82·3 + ·009 + 900 + 573·295 + 3·48
12. ·0095 + 37·2 + 634 + 53·05 + 16·2 + 29 + 18·24 + 16
13. 43·004 + 15·0563 + ·00049 + 35·9 + 8·15 + ·0105 + ·05
14. 1·705 + 3·0075 + ·00594 + 351·8 + 4·2002 + ·8075
15. 892 + 54·8 + 763 + 25·3705 + ·0294 + ·532 + ·18
16. 3·049 + 5·13 + 790 + 85·2 + ·926 + 63·72 + ·25
17. 18·902 + ·0902 + 54·36 + ·036 + 1·9 + 8459
18. 29·27 + 181·53 + ·01 + 10 + 2 + 75·95 + 6·29
19. 72·49 + ·49 + 8 + ·375 + 12 + ·12 + 165 + 296·17
20. 140·2 + 85·79 + 19·245 + 17 + 29·02 + ·17 + ·65
21. 15·0955 + ·0000101 + 75·305 + 41·495 + 6·056035
22. 8095 + 426 + ·03 + ·6492 + ·06492 + 6492·5 + 12
23. 72·034 + 1·1 + 69·4093 + ·0001073 + 42·1894 + ·175
24. 30·205 + 205·2 + 120·12 + 759 + 314·89015 + 25
25. 42·85 + 4285 + 162·001542 + 324·25 + ·32425 + ·025
26. 16·30075 + 13·0024 + ·130024 + 159·375 + 67·285
27. 42·536 + 42536 + ·42536 + ·00075 + ·0101 + 80·1
28. 5·5 + 55 + ·0418 + 73·0015 + 23·12505 + ·19 + 19
29. 24 + 180·0093 + ·0009195 + 2·3 + 82·65 + 44·45
30. 15·295 + 402·75 + 31·4875 + 125·7105 + 36·3905

## Subtraction of Decimals.

1. 40·75—25·25
2. 812·035—304·124
3. 149·53902—21·0049
4. 30·01535—15·2596
5. 55·210156—7·301905
6. 8·001539—3·290156
7. 45·3215—7·215015
8. 2489·52—120·0575
9. 139·5396—45·15901
10. 240·1051—180·4756
11. 3·051093—2·50915
12. 15·29153—12·01324
13. 91·10963—45·21905
14. 6·002956—4·20532
15. 14·32015—14·05324
16. 1854·29—1760·3015
17. 8·101563—·6490158
18. 15·40159—12·95394
19. ·015986—·007565
20. 2·00159—2·000493
21. 17·25162—16·53109
22. 22·109102—·575402
23. ·056342—·0002956
24. 52·53104—14·43903
25. 82984—·95486
26. ·007536—·0058493
27. 239·5—84·93275
28. 49868—2·390589
29. 549·001—120·2562
30. 5025·34—·097584

## Multiplication of Decimals.

1. 55·496 × 4·58; 3·075
2. 8·1905 × 12·5; 30·0546
3. 784·32 × 8·27; 56·278
4. 6·5384 × ·674; 80·854
5. ·05498 × 8·2; 354·75
6. 75·135 × 20·7; 83·296
7. 784·02 × 93·5; 39·029
8. 820·55 × 9·64; 45·375
9. 53·47 × ·385; 91·025
10. 64·95 × 2·86; 16·875
11. 376·8 × 83·45; 7·368
12. 296·2 × 9·296; 82·15
13. 95·38 × 429·1; 37·64
14. 407·6 × ·047; ·00956
15. 1850 × ·395; 7·298
16. 159·6 × 296; ·5785
17. 62·009 × 27·3; 6848
18. 1509·6 × 82·9; 5·758
19. ·05985 × 3·64; 85·95
20. 29·396 × 82·9; ·0027
21. ·7854 × 3·1416; 9·08
22. ·0596 × ·0008; 3·164
23. 2·007 × 389; ·4096
24. 3·785 × 2·05; ·0099
25. ·0084 × 75·8; 3·86
26. ·3796 × ·0595; ·087
27. ·7859 × 33·9; ·0068
28. 763·8 × 539; 7·0008
29. ·05094 × ·095; 9·598
30. ·00859 × 8·29; 85·95
31. 3·785 × 396; 6·087
32. 4539 × ·082 : 35·684
33. 5·057 × ·398; 42·75
34. 89·64 × ·086; 75·86
35. 39·09 × 842; 96·4
36. 8476 × ·009; ·385
37. ·0927 × 4·86; ·639
38. 2·856 × 39·8; 8·025
39. 15·39 × ·0965; 6·75
40. ·0099 × ·0078; ·0196

## DIVISION OF DECIMALS.

1. 4·385÷·5; ·05; 2·5; 6·4
2. 88·476÷1·2; ·6; ·4; ·15
3. 6·144÷·04; 16; ·8; 5·12
4. 235·08÷·18; ·72; ·072; 4·5
5. ·128÷·004; ·016; ·00256
6. ·48÷·024; ·64; 7·5; 50
7. 26·25÷·7; 3·5; ·056; ·28
8. ·0152÷32; ·08; 640
9. ·1288÷·0028; 140; 11·2
10. 971·7÷·3075; ·0123; 98·4
11. 5·483÷100; ·025
12. ·0402132÷·00094; 2·35
13. ·00012054÷·00328; 820
14. ·0992÷·31; ·032; 320
15. 70·8946÷13·825; ·641
16. ·0013014÷·0241; ·0024
17. ·1÷128; 1·024; 25·6
18. 8·084÷1·6; 2·5; 631562·5
19. 4·70117÷2·27; 12·5; 517·75
20. 9·106÷·029; ·3925; ·00116
21. ·004641÷·091; ·16; 10·2
22. 254·17168÷·034685
23. 13·44÷·35; ·0016; ·026
24. 134·70368÷·734; 45·88
25. 574·056÷1·02; ·0268
26. ·000011664÷·024; ·0972
27. 34717·977738÷48·003
28. 37012·48÷64; 72·29
29. 1254÷2·75; ·00912
30. 959744÷·0046; 52·16
31. ·01222125489÷3·87
32. 1008·041888÷82·04
33. ·07844÷5·3; ·0185
34. 118·47672÷·0000708
35. ·000110501552÷1·328
36. ·01554768÷71·98; ·054
37. ·032572÷3·4; ·002395
38. 167·4918÷·0008862
39. ·03931476÷5·56; 14·14
40. 531·786÷·789; ·1348
41. 27416·327796÷·09867
42. ·9101781675÷25·83
43. ·087719808÷·00096
44. 4·8288058÷309·4
45. ·0043506216÷93·6
46. ·12742494345÷774·9
47. 433418·175÷704·745
48. 2683·9665÷·0045
49. 887·80568772÷·00948
50. 3151·06659÷3·9207
51. 337·103025÷·0861
52. ·007797÷·0000069
53. ·00018975÷7·59
54. 298·5984÷·20736
55. 259·72923÷3·0957
56. 347·3567604÷·00468
57. ·009313702853÷1·987
58. ·098648041÷10·8763
59. ·00033984÷·0000354
60. 240839·712÷·0305

## CIRCULATING DECIMALS.

**CASE 3.**—*Express the following as decimal fractions.*

1. $\frac{1}{6}$; $\frac{1}{7}$; $\frac{1}{9}$
2. $\frac{1}{11}$; $\frac{3}{91}$; $\frac{17}{143}$
3. $\frac{1}{99}$; $\frac{7}{13}$; $\frac{9}{11}$
4. $\frac{13}{420}$; $\frac{1}{21}$
5. $\frac{483}{37}$; $\frac{6}{13}$; $\frac{3}{77}$
6. $\frac{3}{7}$; $\frac{3}{2849}$
7. $\frac{1}{247}$
8. $\frac{1}{12}$
9. $\frac{129}{48}$; $\frac{31}{74}$
10. $\frac{37}{39}$; $\frac{24}{44}$

### CASE 4.—*Express the following circulating decimals as vulgar fractions:—*

1. $\cdot\dot{3}$; $\cdot\dot{7}$; $\cdot\dot{0}\dot{3}$
2. $\cdot\dot{2}\dot{7}$; $\cdot\dot{3}\dot{1}$; $\cdot\dot{4}\dot{5}$
3. $\cdot\dot{0}4\dot{5}$; $\cdot\dot{9}7\dot{2}$; $\cdot\dot{7}2\dot{9}$
4. $\cdot\dot{1}33\dot{2}$; $\cdot\dot{0}5\dot{7}$; $\cdot\dot{0}\dot{1}$
5. $\cdot4\dot{3}2\dot{7}$; $\cdot8\dot{4}\dot{2}$; $\cdot7\dot{8}\dot{9}$
6. $4\cdot72\dot{5}$; $3\cdot02\dot{9}$; $\cdot8\dot{7}\dot{4}$
7. $\cdot\dot{5}9\dot{2}$; $4\cdot7\dot{5}4\dot{3}$; $\cdot1\dot{2}\dot{3}$
8. $\cdot008\dot{4}9713\dot{3}$; $\cdot\dot{3}8461\dot{5}$
9. $\cdot\dot{4}2857\dot{1}$; $02\dot{2}\dot{7}$
10. $\cdot26\dot{3}0\dot{1}$; $124\dot{3}\dot{6}$

### CASE 5.—*Make the following circulating decimals similar:—*

1. $\cdot\dot{2}9\dot{1}$; $\cdot381\dot{2}$; $\cdot\dot{7}8\dot{3}$
2. $\cdot7\dot{8}1\dot{4}$; $\cdot6\dot{2}\dot{9}$. $\cdot\dot{1}84\dot{7}$
3. $\cdot539\dot{0}\dot{4}$; $\cdot\dot{0}5\dot{9}$; $\cdot4\dot{7}8\dot{1}$
4. $\cdot6\dot{3}15\dot{9}$; $\cdot4\dot{8}1\dot{5}$; $\cdot\dot{3}90\dot{7}$
5. $\cdot9\dot{2}0\dot{1}$; $\cdot53\dot{8}$; $\cdot4\dot{9}5\dot{3}$
6. $\cdot3\dot{0}5\dot{4}$; $\cdot7\dot{8}$; $\cdot9\dot{5}0\dot{2}$
7. $\cdot35\dot{1}\dot{9}$; $\cdot2\dot{5}4\dot{9}$; $\cdot784\dot{2}$
8. $\cdot7\dot{3}2\dot{8}$; $\cdot4\dot{1}7\dot{8}$; $\cdot\dot{2}90\dot{5}$
9. $\cdot3\dot{1}\dot{5}$; $\cdot0\dot{7}3\dot{2}$; $\cdot421\dot{7}$
10. $\cdot8\dot{7}6\dot{3}$; $\cdot9\dot{2}0\dot{1}$; $\cdot7\dot{2}1\dot{4}$
11. $\cdot87\dot{8}\dot{2}$; $\cdot42\dot{7}\dot{6}$; $\cdot122\dot{5}$
12. $\cdot82\dot{1}\dot{9}$; $\cdot4\dot{3}2\dot{7}$; $\cdot29\dot{0}5\dot{2}$

### ADDITION OF CIRCULATING DECIMALS.

1. $14\cdot\dot{6}+120\cdot\dot{3}+35\cdot0\dot{4}+159\cdot\dot{1}+49\cdot6\dot{7}$
2. $24\cdot1\dot{6}+39\cdot04\dot{2}+5\cdot0\dot{7}+14\cdot00\dot{3}+115\cdot08\dot{3}$
3. $7\cdot00\dot{5}+12\cdot4\dot{2}+13\cdot\dot{8}+19\cdot125\dot{3}+2\cdot0\dot{9}$
4. $\cdot0\dot{1}8\dot{3}+\cdot\dot{4}7\dot{8}+\cdot1\dot{3}7\dot{0}+12\cdot\dot{4}6\dot{8}+\cdot13\dot{5}\dot{4}$
5. $\cdot18\dot{0}\dot{3}+4\cdot\dot{4}23\dot{9}+\cdot\dot{9}6\dot{2}+\cdot\dot{4}8\dot{1}+\cdot50\dot{6}4\dot{0}$
6. $350\cdot\dot{1}4\dot{5}+\cdot\dot{0}57+\cdot\dot{0}\dot{1}+\cdot6\dot{3}7\dot{0}+\cdot68\dot{6}\dot{4}$
7. $\cdot\dot{3}\dot{7}+\cdot\dot{1}+8\cdot\dot{4}98\dot{7}+\cdot\dot{1}29\dot{0}+\cdot\dot{7}85\dot{4}$
8. $31\cdot\dot{7}5\dot{6}+1\cdot\dot{0}07\dot{5}+9\cdot\dot{1}28\dot{7}+\cdot\dot{3}7\dot{5}$
9. $\cdot41\dot{5}94\dot{8}+3\cdot\dot{9}\dot{3}+44\cdot2\dot{7}3\dot{2}+5\cdot\dot{9}5\dot{8}$
10. $6\cdot\dot{1}875+\cdot\dot{1}57\dot{0}+3\cdot498\dot{7}+\cdot357\dot{4}\dot{9}$
11. $\cdot194\dot{3}9\dot{8}+3\cdot\dot{7}+20\cdot3\dot{5}40\dot{0}+\cdot18\dot{9}0\dot{5}$
12. $\cdot75\dot{9}+180\cdot4\dot{2}+12\cdot98\dot{7}5\dot{4}+\cdot4\dot{3}96\dot{5}$
13. $\cdot\dot{1}50\dot{9}+\cdot87\dot{5}\dot{6}+3\cdot4\dot{2}\dot{5}+44\cdot\dot{2}9\dot{4}$
14. $65\cdot3\dot{7}\dot{5}+\cdot\dot{1}\dot{4}+\cdot00\dot{1}+36\cdot4\dot{2}9\dot{8}$

15. $37\cdot\dot{2}+\cdot1\dot{4}85\dot{4}+17\cdot\dot{0}\dot{7}+\cdot5\dot{9}\dot{7}$
16. $\cdot\dot{2}85\dot{4}+\cdot\dot{1}37\dot{5}+18\cdot\dot{9}4\dot{7}+43\cdot54\dot{7}$
17. $\cdot019\dot{3}+\cdot13\dot{0}\dot{9}+\cdot165\dot{4}+\cdot\dot{2}50\dot{9}$
18. $17\cdot29\dot{8}+\cdot40\dot{9}7\dot{8}+12\cdot\dot{1}70\dot{1}+1\cdot\dot{5}8\dot{6}$
19. $10\cdot3\dot{9}\dot{4}+15\cdot\dot{4}2\dot{7}+\cdot00\dot{3}\dot{8}+\cdot749\dot{4}$
20. $\cdot40\dot{7}\dot{3}+19\cdot19\dot{5}+\cdot\dot{1}73\dot{8}\dot{7}+14\cdot\dot{6}$

## SUBTRACTION OF CIRCULATING DECIMALS.

1. $\cdot8457\dot{3}-\cdot534\dot{9}$
2. $\cdot59478\dot{4}-\cdot29045\dot{7}$
3. $84\cdot276-\cdot4938\dot{3}$
4. $\cdot75849\dot{5}-\cdot39065$
5. $9504\cdot3\dot{4}-\cdot1937\dot{8}$
6. $60\cdot7598\dot{9}-25\cdot475\dot{2}$
7. $33\cdot94\dot{7}6\dot{8}-10\cdot8426$
8. $14\cdot473\dot{2}\dot{4}-\cdot639\dot{4}\dot{8}$
9. $100\cdot27\dot{3}9\dot{0}-\cdot20\cdot3\dot{4}7\dot{6}$
10. $\cdot07\dot{9}86\dot{4}-\cdot00439\dot{8}\dot{4}$
11. $\cdot15\dot{7}896\dot{3}-\cdot1053\dot{9}5\dot{7}$
12. $25\cdot09864-\cdot054\dot{9}8\dot{3}$
13. $\cdot730\dot{9}54\dot{3}-\cdot725464$
14. $\cdot8095\dot{9}0\dot{0}-\cdot475\dot{8}5\dot{9}$
15. $\cdot40096\dot{3}2\dot{4}-\cdot30\dot{5}82\dot{3}$
16. $35\cdot34\dot{7}56\dot{9}-\cdot954\dot{0}53\dot{2}$
17. $\cdot19078642-\cdot004\dot{7}86\dot{5}$
18. $\cdot4903278-\cdot39054\dot{8}\dot{4}$
19. $5\cdot309876\dot{4}-4\cdot1902\dot{3}2\dot{7}$
20. $\cdot857632\dot{8}\dot{2}-\cdot7280254$

## MULTIPLICATION OF CIRCULATING DECIMALS.

1. $\cdot34\dot{2}\times\cdot7$; $\cdot05$; $8$
2. $\cdot75\dot{4}\times\cdot6$; $\cdot12$; $9$
3. $\cdot897\dot{8}\times\cdot142$; $7\cdot6$; $5\cdot04$
4. $27\cdot0\dot{4}\times\cdot72$; $8\cdot9$; $2\cdot8$
5. $34\cdot39\dot{8}\times4\cdot24$; $\cdot75$; $8\cdot12$
6. $\cdot7845\dot{9}\times\cdot47$; $3\cdot8$; $\cdot64$
7. $12\cdot904\dot{5}\times18\cdot4$; $20\cdot5$; $3\cdot8$
8. $\cdot86098\dot{2}\times3\cdot6$; $150$; $8\cdot9$
9. $\cdot04\dot{9}6\dot{7}\times\cdot08$; $13\cdot9$; $\cdot436$
10. $7\cdot15\dot{9}\dot{4}\times8\cdot6$; $\cdot76$; $34\cdot3$
11. $14\cdot\dot{8}5\dot{7}\times\cdot12$; $\cdot84$; $19\cdot5$
12. $3\cdot9\dot{0}\dot{8}\times85\cdot2$; $76\cdot5$; $\cdot49$
13. $\cdot001\dot{3}\dot{9}\times\cdot096$; $70\cdot02$; $8\cdot2$
14. $48\cdot7\dot{3}\dot{6}\times\cdot84\dot{9}$; $49\cdot\dot{7}$; $7\cdot\dot{4}$
15. $7\cdot59\dot{8}\times\cdot4\dot{5}\dot{9}$; $\cdot\dot{8}3\dot{4}$; $\cdot\dot{9}7\dot{5}$
16. $\cdot0475\times\cdot\dot{3}$; $\cdot5\dot{7}6\dot{4}$; $\cdot\dot{9}5\dot{7}$
17. $5\cdot\dot{3}8\dot{9}\times\cdot9\dot{4}8\dot{7}$; $\cdot6\dot{3}2\dot{9}$
18. $40\cdot\dot{3}6\dot{7}\times8\cdot\dot{2}4\dot{3}$; $\cdot7\dot{9}$
19. $\cdot3\dot{9}0\dot{7}\times\cdot094$; $\cdot72\dot{7}$; $60$
20. $\cdot00\dot{7}0\dot{5}\times\cdot00\dot{2}\dot{9}$; $49\cdot4$

## DIVISION OF CIRCULATING DECIMALS.

1. $84{\cdot}1\dot{4} \div 8$; 1·2; 1·5
2. $78{\cdot}54\dot{3} \div 9{\cdot}6$; 1·8; 45
3. $443{\cdot}\dot{9} \div {\cdot}9$; ·75; ·96
4. ${\cdot}578\dot{7} \div {\cdot}06$; ·27; ·39
5. ${\cdot}6439\dot{2} \div {\cdot}48$; ·98; ·012
6. $5{\cdot}764\dot{8} \div {\cdot}68$; ·544; ·032
7. $46{\cdot}52\dot{8}\dot{7} \div 8$; 2·56; ·04
8. $233{\cdot}877\dot{1} \div 87{\cdot}34$; 43·67
9. ${\cdot}37\dot{5}9\dot{2} \div {\cdot}125$; ·05
10. $2614{\cdot}\dot{2}8571\dot{4} \div 75$
11. $5083{\cdot}811\dot{5}74\dot{0} \div 58{\cdot}75$
12. ${\cdot}413\dot{1} \div {\cdot}845$
13. $5{\cdot}83 \div 8{\cdot}0208\dot{3}$
14. ${\cdot}\dot{3}93611\dot{7} \div {\cdot}\dot{5}\dot{4}$
15. ${\cdot}\dot{2}8571\dot{4} \div {\cdot}\dot{3}0769\dot{2}$
16. $14{\cdot}\dot{1}4\dot{8} \div 1{\cdot}\dot{9}\dot{2}$
17. ${\cdot}2\dot{5}8722\dot{3} \div {\cdot}\dot{3}5\dot{1}$
18. $26 \div 8{\cdot}\dot{0}4761\dot{9}$
19. $\dot{0}5128\dot{2} \div {\cdot}\dot{3}$
20. $8300 \div 976{\cdot}8$
21. ${\cdot}7916 \div {\cdot}1665$
22. ${\cdot}999 \div {\cdot}013$
23. $5 \div {\cdot}365$; 7·5
24. ${\cdot}087\dot{6}\dot{4} \div 9{\cdot}25$
25. ${\cdot}0018614 \div 37$
26. $509{\cdot}\dot{3} \div {\cdot}6$; 18
27. $49{\cdot}79078\dot{1}\dot{8} \div 49{\cdot}32$
28. $119{\cdot}95941\dot{3} \div 57{\cdot}18$
29. $267{\cdot}70665 \div 7{\cdot}\dot{2}8571\dot{4}$
30. $49{\cdot}725 \div {\cdot}7\dot{7}\dot{2}$

CASE 6.—*Find the value, in positive terms of—*

1. ·25; ·75; ·825 of £1
2. ·775; ·6375; ·125 „
3. ·615625; ·1275 „
4. ·95; ·8635; ·0375 „
5. ·78125; ·009875 „
6. ·75; ·25; ·625 of a s.
7. ·845; ·075; ·615 „
8. ·4375; ·2011 „
9. ·9426; ·09013 „
10. ·2007; ·0983 of a guin.
11. ·8597; ·0725 „
12. ·41075; ·9125 „
13. ·325; ·0362 of a crown
14. ·3079; ·00891 „
15. ·9685; ·0975 of a lb. av.
16. ·00895; ·625 „
17. ·81945; ·9246 „
18. ·4694; ·845 of a lb. troy
19. ·09875; ·09545 of lb. troy
20. ·4625; ·165625 of a ton
21. ·00375; ·8375 „
22. ·549; ·0985 of a yard
23. ·80975; ·3906 „
24. ·8374; ·0928 of a day
25. ·5892; ·00975 „
26. ·0594; 3·295 „ £5
27. 3·984; 7·569 „ £10
28. ·82095; ·4158 „ £20
29. ·63904 of £4 6s. 8d.
30. ·5075 „ 19s. 11½d.
31. 1·396 „ 7s. 9¾d.
32. ·00785 „ 19s. 9¼d.
33. 3·1496 „ £5 13s. 6d.
34. 7·285 „ £2 7s. 4d.
35. ·59058 „ 1dy. 12h.
36. ·76809 „ 3m. 4fr

*Find the value, in positive terms, of—*

| | | | | | |
|---|---|---|---|---|---|
| 37. | 8·4785 | of a cub. yd. | 44. | $\cdot\dot{4}785\dot{4}$ | of £4 |
| 38. | 4·3094 | „ 3 sq. yds. | 45. | $\cdot0\dot{5}84\dot{7}$ | „ £3 12s. 6d. |
| 39. | ·29078 | „ 2 hhd. ale | 46. | $\cdot0\dot{7}14\dot{2}$ | „ a cwt. |
| 40. | ·495007 | „ 3 bu. 2pk. | 47. | $\cdot72\dot{9}0\dot{8}$ | „ 3 dys. 16 h. |
| 41. | 1·5782 | „ a ream | 48. | $\cdot4\dot{5}78\dot{4}$ | „ 4 m. 20 p. |
| 42. | 6·296 | „ 5 tns. 2 cwt. | 49. | $\cdot96\dot{1}58\dot{4}$ | „ 10s. 6d. |
| 43. | 2·1907 | „ 3 qrs. 5 bu. | 50. | $\cdot6\dot{0}25\dot{8}$ | „ 6qr .2pk. |

CASE 7.—*Reduce* *to the dec.*

| | | |
|---|---|---|
| 1. | 5s.; 2s. | of £1 |
| 2. | 9s.; 16s. | „ „ |
| 3. | 3s. 7½d.; 4s. 6d. | „ „ |
| 4. | 11s. 10½d.; 19s. 7½d. | „ „ |
| 5. | 15s. 11¾d.; 18s. 10¾d.* | „ „ |
| 6. | 12s. 6d.; 7s. 4d. | „ £5. |
| 7. | 18s. 5½d.; 10s. 11¼d. | „ 10s. |
| 8. | 3s. 10¼d.; 4s. 2½d. | „ 5s. |
| 9. | £1 3s. 9d.; £2 7s. 4½d. | „ £4 9s. 6d. |
| 10. | £5 2s. 7½d.; £6 3s. 11¼d. | „ 10 guineas. |
| 11. | 6s. 3½d.; 7s. 9¾d. | „ 3s. 9¼d. |
| 12. | 13s. 4¾d.; £1 9s. 10d. | „ 15s. 11d. |
| 13. | 4s. 7½d.; 11s. 6¾d. | „ £4 13s. 6d. |
| 14. | 17s. 3¾d.; 19s. 9½d. | „ 15s. 7¾d. |
| 15. | £6 10s.; £3 14s. | „ £1 5s. 6d. |
| 16. | 3 cwt. 14 lbs. 10 oz. | „ 2 tons. |
| 17. | 6 ft. 35 in.; 19 in. | „ a sq. yd. |
| 18. | 19 ft. 1260 in. | „ a cu. yd. |
| 19. | 17 gals. 2 qts. 1 pt. | „ a hhd. wine. |
| 20. | 15 gals. 3 qts. | „ a hhd. ale. |
| 21. | 15 days 16 hrs. 25 m. | „ 365¼ days. |
| 22. | 6 bu. 3 p. 1 gal. | „ 3 qrs. |
| 23. | 4 dr. 2 sc. 18 gr. | „ a lb. |
| 24. | 7 cwt. 10 lbs. 12 oz. | „ 3 tons 10 cwt. |
| 25. | £7 19s. 11¾d. | „ £10 12s. 11½d. |
| 26. | 3 roods 840 yards | „ of 2 acres. |
| 27. | 7 fur. 30 p. | „ 8 miles. |
| 28. | 3 qrs. 4 nls. | „ 3 E. ells. |
| 29. | £5 7s. 3¼d. | „ £20. |
| 30. | £8 15s. 9¾d. | „ 10 guineas. |

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[*] It will, in most cases, be considered sufficient if the answers are ·ked out to seven places of decimals.

| | *Reduce* | *to the dec.* |
|---|---|---|
| 31. | 13 cwt. 10 oz. 4 dr. | of 3 tons 4 cwt. |
| 32. | 20 tons 3 qrs. 12 lbs. | „ 45 tons 15 cwt. |
| 33. | 7 oz. 6 dwts. 15 grs. | „ 3 lbs. 17 dwts. |
| 34. | 2 kild. 4 gals. 1 pt. | „ 8 hhds. |
| 35. | 4 qrs. 5 bu. 3 p. | „ 4 lasts. |
| 36. | 16 quires 19 sheets | „ 7 reams. |
| 37. | 5 hhds. 80 gals. | „ 4 tuns. |
| 38. | 220 ac. 2 r. 30 p. | „ a sq. mile. |
| 39. | £15 11s. 3½d. | „ £100. |
| 40. | 20 hrs. 15 m. 45 sec. | „ 3 d. 15 hrs. |
| 41. | 8 qrs. 17 lbs. 10 dr. | „ 2 cwt. 50 lbs. |
| 42. | 6 lbs. 3 oz. 3 dr. | „ a stone. |
| 43. | 20 cu. ft. 1,720 cu. in. | „ 3 cu. yds. |
| 44. | 2 m. 7 fur. 200 yds. | „ 2 leagues. |
| 45. | 4,000 yds. 5 ft. | „ an acre. |
| 46. | 1,250 yds. 2 ft. | „ 3¾ miles. |
| 47. | £1 11s. 10¼d. | „ 9 guineas. |
| 48. | 5 d. 9 hrs. 20 m. | „ 3 weeks. |
| 49. | £9 19s. 4¾d. | „ £7 19s. 6½d. |
| 50. | £13 14s. 10d. | „ £15 17s. 4¼d. |

## MISCELLANEOUS EXAMPLES IN DECIMAL FRACTIONS.

1. Find, in positive terms, the sum of $\cdot\dot{6}$ of a sovereign; ·75 of a guinea; $\cdot 1\dot{6}$ of a crown; and 2½d.

2. Reduce $\cdot 3\dot{5}$ to an equivalent vulgar fraction.

3. Reduce $\frac{7}{10}$ of $\frac{2}{3}$ of $\frac{3}{4}$ of $\frac{13\frac{1}{2}}{7}$ to a decimal.

4. Simplify $\dfrac{2\cdot048 \times \cdot 0\dot{7}2}{\cdot 64 \times \cdot 0009} \times \dfrac{54\cdot045 \times 12}{8\cdot1 \times \cdot 036}$

5. If ·75 of a yard of cloth cost ·625 of £1, what will 61·5 yards cost?

6. Divide £48 17s. 6d. by 4·25, and reduce the result to the decimal of £20.

7. Subtract $\cdot 4\dot{7}\dot{4}$ from $\cdot 8\dot{9}\dot{2}$, and express the difference as a vulgar fraction.

8. Find the product of $\frac{5}{21} \times 3\frac{1}{7} \times \frac{14}{15} \times \frac{3}{11}$, and reduce it to a decimal.

9. Find, in positive terms, the value of ·249825 of a pole, and of ·065 of an acre.

10. Reduce 7 dr. to the decimal of a lb. avoirdupois.

11. Find the sum of $\cdot\dot{5} + \cdot\dot{2}\dot{5} + 17\cdot\dot{4}\dot{7} + 9\cdot\dot{6}5\dot{1} + 67\cdot3\dot{4}\dot{5}$.

12. A person having ·6 of a manufactory sells ·75 of his share for £1,710, what is the worth of the whole manufactory at the same rate?

13. If ·075 of a guinea is paid for the carriage of 2·5 tons of goods 2·9 miles, what is the cost per cwt. for a mile?

14. Reduce ·4785 of a lb. troy to the decimal of a lb. avoirdupois, and find the difference between £2$\frac{71}{80}$ and £3·125.

15. Subtract $\cdot038\dot{2}$ from $3\cdot85\dot{6}\dot{4}$, and multiply $\cdot\dot{4}2\dot{1}$ by ·002.

16. Reduce 17 yds. 1 ft. 6 in. to the decimal of a mile, and 15s. 9$\frac{3}{4}$d. to the decimal of £1.

17. Divide $1327\cdot871\dot{9}$ by $7\cdot68\dot{4}$, and express $\cdot008\dot{4}9713\dot{3}$ as a vulgar fraction.

18. If ·1875 of a factory cost £273·125, what is the worth of $\frac{5}{32}$ of it at the same rate?

19. Reduce $\frac{2}{9}$ (5 oz. 3 dwts. 10 grs.) to the decimal of a lb. troy, and $\frac{1}{8}$ (2 cwts. 17 lbs. 10 oz.) to the decimal of a cwt.

20. Simplify $\frac{1}{2}\left(\frac{27 \times 21\cdot\dot{3}}{48}\right) \times \frac{2\cdot8541\dot{6}}{137}$

21. Reduce 20 cwt. 2 qrs. 14 lbs. 10 drs. to the decimal of a ton, and find the value in inches of ·009943 of a mile.

22. Find the result of $\frac{3}{4}(\dot{5} \times \cdot5\dot{3} \times 2)$.

23. If 3·5 yds. of cloth, 1·75 yds. wide, will make a suit of clothes, how much would be required if the cloth were only $\frac{3}{4}$ yard wide?

24. If 7·625 yds. of cloth cost £$7\cdot91\dot{6}$, what will $49\cdot\dot{2}\dot{7}$ yds. cost?

25. The sun's diameter is 111·454 times the diameter of the earth, which is 7925·648 miles; find the sun's diameter in miles.

26. Find the sum of ·775 of £1, ·824 of a shilling, and ·305 of a crown, and express it as the decimal of a guinea.

27. If 17¼ lbs. of coffee cost 25·875s., how much may be bought for £3·646875?

28. Simplify $$\frac{\cdot0402132 \times \cdot00328}{\cdot00094 \times \cdot00012054} \times \frac{\cdot03675 \times 4\cdot70117}{42\cdot78 \times 2\cdot27}$$

29. A bankrupt owes one of his creditors £296·85, and pays 7·5s. in the pound; how much does the creditor receive?

30. Bought 326·25 lbs. of tobacco at the rate of 10·5s. for 4·5 lbs.; what does it cost?

31. Find the sum of $134\cdot\dot{0}\dot{9} + 97\cdot2\dot{6} + 9\cdot08\dot{3} + 1\cdot5 + \cdot\dot{8}1\dot{4}$.

32. If, when wheat is 6·25s. a bushel, the price of 10 oz. of bread is 3·75d., what ought to be the cost of 2¾ lbs. of bread when wheat is 8s. 4d. a bushel?

33. To how many places would the following decimals extend when made similar, $\cdot4\dot{2}\dot{8}$; $\cdot5\dot{9}876\dot{4}$; $\cdot37\dot{8}42965\dot{0}$?

34. What is the difference between ·41 of a day and ·16 of an hour; and find the sum, in positive terms, of ·27 of a ton, ·29 of a cwt., ·17 of a qr., and ·7 of a lb.

35. Simplify $\left(\frac{8\cdot\dot{6}\dot{3}}{\cdot\dot{0}731\dot{7}} + \frac{3\cdot17\dot{6}}{\cdot2\dot{4}}\right)(6\cdot1\dot{7}\dot{2} \times \cdot\dot{4})$.

36. How much ought to be paid for the carriage of 7·875 cwt. for 50 miles, if the carriage of 3 cwt. for 150 miles cost £2·1?

37. A bankrupt pays 8s. 7¼d. in the £, and pays in all £$420\cdot313541\dot{6}$; what are his total debts?

38. A person has an income of £2107·6, and he spends

at the rate of £4 8s. $1\frac{19}{305}$d. a day; how much does he save in a year?

39. Reduce £3 12s. $6\frac{1}{4}$d. to the decimal of £1, and find the value, in positive terms, of ·3375 of an acre.

40. If 12 men in $18{\cdot}\dot{3}$ days earn £6 $2{\cdot}\dot{2}$s., what will 15 men earn in 6 days at the same rate?

41. If the carriage of 17·75 cwt. for $7\frac{1}{2}$ miles cost £1 0s. $8\frac{1}{2}$d., what weight ought to be carried 20 miles or $16{\cdot}\dot{3}$s.?

42. Express, in positive terms, the difference between $\frac{2}{7}$ of £5 16s. and $\frac{3}{5}$ of a shilling.

43. Express, in positive terms, the result of

$$\frac{5\times\frac{2}{3}\times\frac{2}{7}\times{\cdot}6\times4{\cdot}1\dot{6}}{2{\cdot}\dot{3}8095\dot{2}}$$

44. Find the value of 1 cwt. of tea at the rate of £2 $3\frac{3}{224}$s. for $13{\cdot}\dot{6}$ lbs.

45. Reduce 1 qr. 3 nls. to the decimal of 3 yds., and 3 bu. 1 p. to the decimal of a quarter.

46. Simplify — $\frac{1}{2}\left(\frac{{\cdot}71\dot{8}\times{\cdot}\dot{6}}{{\cdot}\dot{4}7\dot{8}}\right)\times\frac{1{\cdot}09310\dot{6}}{{\cdot}257}\times\frac{{\cdot}000177089}{{\cdot}004735}$

47. The population of a country in the year 1851 was 16,500,000, and in the year 1861 it had increased 10·375 per cent. What was the population in the latter year?

48. In 1851 the population of Manchester was, in round numbers, 316,000, and in 1861 it reached 357,000. At what rate per cent. had it increased in the 10 years?

49. What is the sum of $\frac{2}{15}$ of 9s. $10\frac{1}{2}$d., and $\frac{2}{3}$ of ·625 of a shilling?

50. Find the value of 3 hhds. of sugar, each weighing 11 cwt. 3 qrs. 10·12 lbs., at the rate of £3 12·76s. for 1·6 cwt.

51. Express, in positive terms, ·712 of 3 quarters of wheat.

52. Find, in positive terms, the sum of ·17 of a ton, ·19 of a cwt., ·17 of a quarter, and ·7 of a lb.

53. If ·375 of a yard of cloth cost ·4 of £1, what will ·3125 of a yard cost?

54. Simplify $\dfrac{\frac{1}{5}\text{ of }19}{\frac{2}{3}\text{ of }\cdot75}\times\dfrac{7\cdot6\times\cdot0342\times1\cdot4\dot{4}\dot{2}}{\cdot0045\times57\cdot76\times\cdot3\dot{0}\dot{9}}$

55. Reduce 7 minutes to the decimal of a day, and divide £10 11s. 3d. by 29·25.

56. Reduce ·56 of 5s. 6½d. to the decimal of 10s. 6d., and ·25 of ·26 of 11s. 8½d. to the decimal of £1 13s. 6d.

57. Find the difference between $\dfrac{\dfrac{\cdot375\text{ of }5.\dot{3}}{54}}{119\frac{3}{4}}$ and $\dfrac{204\cdot\dot{6}}{12\frac{9}{11}}$ and find the sum of $\cdot12\dot{5}$; $4\cdot\dot{1}6\dot{3}$; $\cdot1\cdot\dot{7}14\dot{3}$; $2\cdot\dot{5}\dot{4}$.

58. Simplify—

$$\left(\frac{4\cdot\dot{6}\times2\cdot\dot{1}}{6\cdot2\div1\cdot25}\div\cdot0625\right)\times\left(\frac{\cdot0\dot{6}\times2\cdot\dot{3}\times\cdot\dot{3}\dot{6}}{(4\cdot\dot{8}5714\dot{2}\times\cdot4).\div\cdot\dot{1}4285\dot{7}}\right)\div\frac{\cdot8\times\cdot\dot{8}\dot{1}}{\cdot6}.$$

## PRACTICE.

1. 8046 at ¼d.; ½d.; ¾d.
2. 7654 „ ¾d.; ½d.; ¼d.
3. 2103 „ ½d.; ¾d.; ¼d.
4. 6154 „ ¾d.; ½d.; ¼d.
5. 7132 „ ¼d.; ¾d.; ½d.
6. 1567 „ ¾d.; ¼d.; ½d.
7. 3438 „ ¼d.; ¾d.; ½d.
8. 2679 „ ¾d.; ¼d.; ½d.
9. 6872 „ ½d.; ¼d.; ¾d.
10. 4983 „ ¼d.; ½d.; ¾d.
11. 6208 „ ½d.; ¼d.; ¾d.
12. 3572 „ ¼d.; ½d.; ¾d.
13. 1634 „ 2d.; 3d.; 1d.
14. 7986 „ 3d.; 4d.; 1¼d.
15. 2535 „ 6d.; 2d.; 1¼d.
16. 9201 at 2½d.; 1¼d.
17. 4822 „ 1½d.; 3½d.
18. 1139 „ 1½d.; 6½d.
19. 7135 „ 1½d.; 4¼d.
20. 2086 „ 1¾d.; 3¾d.
21. 1989 „ 1¾d.; 5d.
22. 5209 „ 1¾d.; 2½d.
23. 4122 „ 2d.; 4d.
24. 9363 „ 2¼d.; 9d.
25. 1978 „ 2¼d.; 8d.
26. 7654 „ 2¼d.; 7d.
27. 2001 „ 2½d.; 4¼d.
28. 7220 „ 2½d.; 7¾d.
29. 5367 „ 2½d.; 5½d.
30. 3845 „ 2¾d.; 4¾d.

31. 4764 at 2¾d.; 8¼d.
32. 2011 „ 2¼d.; 1¾d.
33. 6853 „ 3d.; 3½d.
34. 1725 „ 3¼d.; 4½d.
35. 2179 „ 3¼d.; 1½d.
36. 1863 „ 3¼d.; 10d.
37. 4075 „ 3½d.; 11d.
38. 1009 „ 3½d. 10¾d.
39. 7365 „ 3½d.; 11¼d.
40. 2133 „ 3¾d.; 10½d.
41. 3986 „ 3¾d.; 10¼d.
42. 2189 „ 3¾d.; 6¼d.
43. 2468 „ 4d.; 9d.
44. 2395 „ 4¼d.; 7½d.
45. 6203 „ 4½d.; 10¾d.
46. 6251 „ 4¾d.; 5¼d.
47. 7863 „ 5d.; 2¾d.
48. 4209 „ 5¼d.; 1½d.
49. 6354 „ 5½d.; 1¾d.
50. 2009 „ 5¾d.; 6¼d.
51. 4786 „ 6d.; 5¾d.
52. 5705 „ 6¼d.; 9½d.
53. 7950 „ 6½d.; 3d.
54. 1578 „ 6¾d.; 4d.
55. 5009 „ 7d.; 4½d.
56. 9420 „ 7¼d.; 11d.
57. 6154 „ 7½d.; 10½d.
58. 2008 „ 7¾d.; 11¾d.
59. 5867 „ 8d.; 6½d.
60. 4786 „ 8¼d.; 5½d.
61. 8526 „ 8½d.; 2¾d.
62. 2189 „ 8¾d.; 5d.
63. 8500 „ 9d.; 7½d.
64. 7051 „ 9¼; 10½d.
65. 8695 „ 9½d.; 11¼d.
66. 7201 „ 9¾d.; 6¼d.
67. 7500 „ 10d.; 11d.
68. 8789 „ 10¼d.; 4¼d.
69. 6098 „ 10½d.; 3¾d.
70. 7098 „ 10¾d.; 3½d.
71. 1867 „ 11d.; 8¼d.
72. 6001 at 11¼; 8½d.
73. 8611 „ 11½d.; 8¾d.
74. 1786 „ 11¾d.; 10¼d.
75. 3206 „ 1s.
76. 3576 „ 1s. 1d.
77. 2007 „ 1s. 1¼d.
78. 3687 „ 1s. 1½d.
79. 7596 „ 1s. 1¾d.
80. 5274 „ 1s. 2d.
81. 4171 „ 1s. 2¼d.
82. 6953 „ 1s. 2½d.
83. 2986 „ 1s. 2¾d.
84. 2716 „ 1s. 3d.
85. 7001 „ 1s. 3¼d.
86. 5671 „ 1s. 3½d.
87. 4217 „ 1s. 3¾d.
88. 9603 „ 1s. 4d.
89. 9731 „ 1s. 4¼d.
90. 1786 „ 1s. 4½d.
91. 6001 „ 1s. 4¾d.
92. 6486 „ 1s. 5d.
93. 3891 „ 1s. 5¼d.
94. 8671 „ 1s. 5½d.
95. 5800 „ 1s. 5¾d.
96. 5161 „ 1s. 6d.
97. 2065 „ 1s. 6¼d.
98. 6785 „ 1s. 6½d.
99. 8762 „ 1s. 6¾d.
100. 8653 „ 1s. 7d.
101. 4713 „ 1s. 7¼d.
102. 1786 „ 1s. 7½d.
103. 7631 „ 1s. 7¾d.
104. 1900 „ 1s. 8d.
105. 6010 „ 1s. 8¼d.
106. 2791 „ 1s. 8½d.
107. 5016 „ 1s. 8¾d.
108. 1178 „ 1s. 9d.
109. 7801 „ 1s. 9¼d.
110. 5903 „ 1s. 9½d.
111. 1009 „ 1s. 9¾d.
112. 2901 „ 1s. 10d.

113. 7417 at 1s. 10¼d.
114. 9210 „ 1s. 10½d.
115. 6400 „ 1s. 10¾d.
116. 2900 „ 1s. 11d.
117. 1707 „ 1s. 11¼d.
118. 8010 „ 1s. 11½d.
119. 1001 „ 1s. 11¾d.
120. 6201 „ 2s. 1½d
121. 4119 „ 2s. 9¾d.
122. 2008 „ 3s. 2¾d.
123. 9184 „ 5s. 8½d.
124. 2916 „ 4s. 2¼d.
125. 7561 „ 5s. 11d.
126. 7009 „ 3s. 9¼d.
127. 1898 „ 6s. 7½d.
128. 4161 „ 7s. 4½d.
129. 1098 „ 4s. 5¾d.
130. 7151 „ 2s. 6¼d.
131. 4777 „ 3s. 10¾d.
132. 6066 „ 8s. 1½d.
133. 7113 „ 5s. 7¼d.
134. 6041 „ 9s. 3¾d.
135. 7006 „ 6s. 8½d.
136. 3740 „ 7s. 2¾d.
137. 3991 „ 4s. 10½d.
138. 6055 „ 5s. 5¼d.
139. 1199 „ 6s. 7½d.
140. 8031 „ 9s. 4¾d.
141. 6993 „ 8s. 3¼d.
142. 8119 „ 9s. 6½d.
143. 9807 „ 2s. 11¾d.
144. 3333 „ 7s. 7¼d.
145. 4494 „ 3s. 11½d.
146. 5565 „ 1s. 10¾d.
147. 7007 „ 9s. 1¾d.
148. 8154 „ 10s. 2¼d.
149. 9009 „ 6s. 8½d.
150. 2012 „ 8s. 5¾d.
151. 1798 „ 5s. 4¼d.
152. 4186 „ 1s. 9¼d.
153. 2790 „ 5s. 3¾d.
154. 3019 at 4s. 11d.
155. 5008 „ 6s. 0½d.
156. 9501 „ 8s. 1¾d.
157. 7155 „ 10s. 2½d.
158. 5111 „ 3s. 10¼d.
159. 8138 „ 2s. 5¾d.
160. 2091 „ 4s. 3¾d.
161. 7209 „ 11s. 2¼d.
162. 8909 „ 11s. 4¾d.
163. 6721 „ 12s. 0¼d.
164. 1980 „ 10s. 9¾d.
165. 5916 „ 13s. 4½d.
166. 4239 „ 13s. 9¼d.
167. 7205 „ 14s. 5½d.
168. 1001 „ 17s. 0¾d.
169. 7241 „ 15s. 4¼d.
170. 9024 „ 13s. 7½d.
171. 1909 „ 12s. 0¾d.
172. 1754 „ 10s. 11¼d.
173. 8008 „ 14s. 1½d.
174. 1724 „ 6s. 9¾d.
175. 4215 „ 17s. 4½d.
176. 1712 „ 11s. 3¼d.
177. 7242 „ 18s. 2d.
178. 1911 „ 17s. 3¼d.
179. 4210 „ 19s.
180. 1311 „ 12s. 1½d.
181. 2712 „ 15s. 5¼d.
182. 1910 „ 10s. 2½d.
183. 2001 „ 14s. 8½d.
184. 7010 „ 11s. 4½d.
185. 7321 „ 10s. 5½d.
186. 1927 „ 13s. 2¼d.
187. 2745 „ 11s. 4¾d.
188. 1725 „ 19s. 10¼d.
189. 9127 „ 18s. 5½d.
190. 2819 „ 17s. 6¼d.
191. 6210 „ 12s. 11½d.
192. 4822 „ 15s. 9½d.
193. 7681 „ 14s. 9½d.
194. 1780 „ 15s. 11d.

195. 8680 at 19s. 10¾d.
196. 7007 „ 11s. 8½d.
197. 1919 „ 13s. 7¼d.
198. 8414 „ 15s. 8½d.
199. 1919 „ 14s. 3¼d.
200. 8008 „ 17s. 0½d.
201. 1986 „ 11s. 7¼d.
202. 1421 „ 13s. 8d.
203. 5706 „ 16s. 3½d.
204. 8208 „ 13s. 8¼d.
205. 70016 „ 13s. 7¾d.
206. 51201 „ 11s. 9½d.
207. 82768 „ 19s. 10½d.
208. 17005 „ 17s. 0¾d.
209. 19191 „ 12s. 5¼d.
210. 75078 „ 9s. 2¾d.
211. 51998 „ 11s. 11½d.
212. 12212 „ 14s. 5¾d.
213. 37201 „ 12s. 4½d.
214. 87567 „ 18s. 7¼d.
215. 34211 „ 19s. 6¾d.
216. 85321 „ 15s. 3¾d.
217. 91386 „ 16s. 1½d.
218. 50090 „ 15s. 10½d.
219. 75201 „ 13s. 8¾d.
220. 73208 „ 18s. 9¾d.
221. 10009 „ 8s. 11½d.
222. 41414 „ 12s. 8¾d.
223. 30133 „ 19s. 7¼d.
224. 88088 „ 15s. 6¾d.
225. 95101 „ 13s. 10¾d.
226. 41738 „ 16s. 3¼d.
227. 19193 „ 17s. 5½d.
228. 29861 „ 7s. 2½d.
229. 88319 „ 19s. 3¾d.
230. 39201 „ 18s. 8¼d.
231. 19853 „ 14s. 5½d.
232. 52010 „ 9s. 9¾d.
233. 31813 „ 8s. 0¼d.
234. 42031 „ 17s. 0½d.
235. 38003 „ 13s. 9¾d.

236. 51018 at 12s. 11d.
237. 92176 „ 16s. 7¾d.
238. 52007 „ 11s. 1½d.
239. 66166 „ 15s. 4¼d.
240. 83721 „ 10s. 7¼d.
241. 64640 „ 19s. 5¾d.
242. 48321 „ 18s. 4½d.
243. 29121 „ 17s. 3¼d.
244. 59838 „ 9s. 2¾d.
245. 92038 „ 8s. 1½d.
246. 33133 „ 20s. 2¾d.
247. 17321 „ 11s. 6¼d.
248. 58000 „ 15s. 11¾d.
249. 58432 „ 14s. 10½d.
250. 48144 „ 13s. 9¼d.
251. 72098 „ 12s. 8¾d.
252. 21001 „ 15s. 4¾d.
253. 17216 „ £1 5s.
254. 27813 „ £1 4s.
255. 17211 „ £2 6s. 8d.
256. 82134 „ £3 10s.
257. 62173 „ £7 3s. 4d.
258. 42136 „ £5 15s.
259. 34215 „ £4 10s. 6d.
260. 19993 „ £8 5s. 6d.
261. 73691 „ £2 4s. 6d.
262. 23861 „ £4 10s. 3d.
263. 38603 „ £9 15s. 6d.
264. 13331 „ £6 12s. 6d.
265. 59821 „ £7 2s.
266. 43208 „ £3 3s.
267. 58163 „ £2 6s.
268. 70081 „ £5 7s.
269. 92168 „ £8 8s.
270. 31120 „ £7 9s.
271. 52016 „ £6 11s.
272. 67321 „ £4 12s.
273. 67381 „ £8 13s.
274. 73200 „ £10 14s.
275. 87016 „ £1 16s.
276. 32133 „ £2 17s.

| | | | £ | s. | d. | | | | £ | s. | d. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 277. | 48163 | at | 3 | 18 | 0 | 317. | 72223 | at | 9 | 7 | $8\frac{3}{4}$ |
| 278. | 62001 | „ | 5 | 19 | 0 | 318. | 38638 | „ | 8 | 12 | $5\frac{1}{4}$ |
| 279. | 48138 | „ | 2 | 3 | 6 | 319. | 72171 | „ | 3 | 19 | $0\frac{1}{2}$ |
| 280. | 68172 | „ | 5 | 5 | 8 | 320. | 95868 | „ | 0 | 15 | $11\frac{3}{4}$ |
| 281. | 28631 | „ | 5 | 7 | 2 | 321. | 73201 | „ | 0 | 10 | $6\frac{1}{3}$ |
| 282. | 59018 | „ | 8 | 17 | 5 | 322. | 38162 | „ | 0 | 9 | $7\frac{2}{5}$ |
| 283. | 60373 | „ | 1 | 16 | 4 | 323. | 60101 | „ | 1 | 5 | $11\frac{1}{6}$ |
| 284. | 70018 | „ | 4 | 14 | 7 | 324. | 37321 | „ | 8 | 17 | $10\frac{2}{7}$ |
| 285. | 21381 | „ | 1 | 13 | 9 | 325. | 91901 | „ | 7 | 3 | $11\frac{1}{9}$ |
| 286. | 15801 | „ | 7 | 11 | 11 | 326. | $21680\frac{1}{5}$ | „ | 0 | 19 | $3\frac{1}{3}$ |
| 287. | 83121 | „ | 3 | 9 | 3 | 327. | $82018\frac{2}{5}$ | „ | 0 | 17 | $9\frac{3}{4}$ |
| 288. | 41671 | „ | 2 | 18 | 2 | 328. | $25816\frac{2}{9}$ | „ | 5 | 12 | $8\frac{3}{4}$ |
| 289. | 58161 | „ | 7 | 19 | 3 | 329. | $82161\frac{3}{10}$ | „ | 12 | 11 | $5\frac{3}{4}$ |
| 290. | 20016 | „ | 8 | 8 | $11\frac{1}{2}$ | 330. | $21381\frac{2}{11}$ | „ | 11 | 15 | $7\frac{1}{4}$ |
| 291. | 17321 | „ | 3 | 16 | $8\frac{1}{4}$ | 331. | 27861 | „ | 5 | 19 | $8\frac{3}{4}$ |
| 292. | 20013 | „ | 4 | 0 | $11\frac{1}{2}$ | 332. | 58001 | „ | 8 | 17 | $11\frac{1}{4}$ |
| 293. | 31861 | „ | 0 | 9 | $11\frac{3}{4}$ | 333. | 32081 | „ | 7 | 14 | $4\frac{3}{7}$ |
| 294. | 21863 | „ | 1 | 10 | $9\frac{1}{4}$ | 334. | 21986 | „ | 3 | 15 | $10\frac{4}{9}$ |
| 295. | 81386 | „ | 5 | 18 | $4\frac{1}{2}$ | 335. | 58016 | „ | 0 | 13 | $8\frac{5}{11}$ |
| 296. | 61381 | „ | 9 | 15 | $6\frac{3}{4}$ | 336. | 24413 | „ | 4 | 11 | $3\frac{8}{9}$ |
| 297. | 17386 | „ | 2 | 6 | 10 | 337. | 42041 | „ | 11 | 3 | $0\frac{1}{12}$ |
| 298. | 21381 | „ | 7 | 5 | 5 | 338. | $37216\frac{1}{8}$ | „ | 0 | 9 | $7\frac{3}{4}$ |
| 299. | 31210 | „ | 1 | 8 | 7 | 339. | $48008\frac{3}{7}$ | „ | 0 | 12 | $6\frac{1}{2}$ |
| 300. | 62138 | „ | 9 | 15 | $2\frac{1}{2}$ | 340. | $78209\frac{7}{10}$ | „ | 3 | 16 | $9\frac{3}{4}$ |
| 301. | 82011 | „ | 3 | 16 | $3\frac{1}{4}$ | 341. | $23016\frac{4}{7}$ | „ | 12 | 13 | $10\frac{1}{2}$ |
| 302. | 32016 | „ | 4 | 12 | $9\frac{1}{4}$ | 342. | $18201\frac{8}{11}$ | „ | 9 | 19 | $0\frac{3}{4}$ |
| 303. | 63201 | „ | 10 | 17 | $10\frac{1}{2}$ | 343. | $38001\frac{3}{11}$ | „ | 0 | 18 | $1\frac{1}{2}$ |
| 304. | 32100 | „ | 6 | 14 | $3\frac{3}{4}$ | 344. | $58138\frac{5}{12}$ | „ | 0 | 8 | $11\frac{1}{4}$ |
| 305. | 23860 | „ | 9 | 14 | $10\frac{3}{4}$ | 345. | 20016 | „ | 7 | 16 | $9\frac{5}{12}$ |
| 306. | 92016 | „ | 10 | 11 | $8\frac{1}{2}$ | 346. | 16704 | „ | 3 | 5 | $4\frac{9}{10}$ |
| 307. | 86032 | „ | 1 | 12 | $11\frac{1}{4}$ | 347. | 26170 | „ | 0 | 8 | $7\frac{11}{12}$ |
| 308. | 20016 | „ | 0 | 19 | $3\frac{1}{4}$ | 348. | 33759 | „ | 3 | 6 | $6\frac{1}{4}\ \frac{5}{8}$ |
| 309. | 80001 | „ | 12 | 16 | $6\frac{1}{3}$ | 349. | 45465 | „ | 0 | 14 | $9\frac{7}{12}$ |
| 310. | 32186 | „ | 11 | 9 | $2\frac{3}{4}$ | 350. | 56024 | „ | 0 | 5 | $8\frac{1}{4}\ \frac{5}{6}$ |
| 311. | 12001 | „ | 0 | 17 | $6\frac{1}{2}$ | 351. | 16248 | „ | 7 | 4 | $9\frac{5}{6}$ |
| 312. | 72016 | „ | 2 | 13 | $7\frac{3}{4}$ | 352. | 20175 | „ | 3 | 13 | $8\frac{7}{8}$ |
| 313. | 28361 | „ | 5 | 15 | $11\frac{1}{2}$ | 353. | 36567 | „ | 0 | 17 | $7\frac{3}{11}$ |
| 314. | 82010 | „ | 0 | 17 | $5\frac{3}{4}$ | 354. | 14215 | „ | 0 | 0 | $11\frac{5}{12}$ |
| 315. | 32108 | „ | 0 | 16 | $0\frac{1}{4}$ | 355. | 51336 | „ | 3 | $18\frac{4}{9}$ | |
| 316. | 19286 | „ | 8 | 18 | $6\frac{3}{4}$ | 356. | 37668 | „ | 0 | 19 | $11\frac{1}{12}$ |

| | | | £ | s. | d. |
|---|---|---|---|---|---|
| 357. | 49236 | at | 0 | 13 | $8\frac{11}{15}$ |
| 358. | 66762 | ,, | 1 | 13 | $8\frac{9}{10}$ |
| 359. | 15365 | ,, | 4 | $16\frac{9}{10}$ | |
| 360. | $32418\frac{3}{4}$ | ,, | 2 | 11 | $8\frac{1}{4}$ |
| 361. | $16535\frac{1}{3}$ | ,, | 3 | 7 | 8 |
| 362. | $21751\frac{7}{8}$ | ,, | 2 | 18 | $9\frac{1}{4}$ |
| 363. | $15361\frac{2}{3}$ | ,, | 2 | 9 | $4\frac{1}{2}$ |
| 364. | $32590\frac{2}{3}$ | ,, | 0 | 16 | $6\frac{3}{4}$ |
| 365. | $88816\frac{4}{5}$ | ,, | 2 | 3 | $5\frac{1}{4}$ |
| 366. | $50693\frac{5}{12}$ | ,, | 3 | 15 | $8\frac{1}{2}$ |
| 367. | $12291\frac{1}{5}$ | ,, | 6 | 13 | $9\frac{1}{2}$ |
| 368. | $10846\frac{2}{9}$ | ,, | 0 | 4 | $7\frac{3}{4}$ |
| 369. | $35609\frac{4}{9}$ | ,, | 3 | 11 | 11 |
| 370. | $60111\frac{1}{3}$ | ,, | 1 | 16 | $5\frac{1}{4}$ |
| 371. | $38269\frac{1}{2}$ | ,, | 5 | 14 | $8\frac{1}{2}$ |
| 372. | $22225\frac{5}{6}$ | ,, | 3 | 14 | $1\frac{3}{4}$ |
| 373. | $88888\frac{8}{9}$ | ,, | 8 | 8 | 8 |
| 374. | $13483\frac{1}{2}$ | ,, | 0 | 17 | $10\frac{1}{4}$ |
| 375. | $22361\frac{1}{3}$ | ,, | 0 | 18 | $7\frac{1}{2}$ |
| 376. | 29928 | ,, | 7 | 18 | 2 |
| 377. | 47214 | ,, | 2 | 13 | $9\frac{1}{2}$ |
| 378. | 22060 | ,, | 6 | 13 | $8\frac{1}{4}$ |
| 379. | 32705 | ,, | 11 | 18 | 7 |
| 380. | 14320 | ,, | 4 | 13 | $10\frac{1}{2}$ |
| 381. | 20018 | ,, | 9 | 11 | $10\frac{6}{7}$ |
| 382. | 49839 | ,, | 8 | 13 | $6\frac{4}{15}$ |
| 383. | 58320 | ,, | 11 | $12\frac{8}{13}$ | |
| 384. | 91286 | ,, | 10 | $14\frac{3}{5}$ | |
| 385. | 73216 | ,, | 2 | 17 | $6\frac{3}{10}$ |
| 386. | 37321 | ,, | 0 | 18 | $3\frac{11}{12}$ |
| 387. | 29138 | ,, | 0 | 16 | $9\frac{7}{10}$ |
| 388. | 47320 | ,, | 3 | $19\frac{4}{13}$ | |
| 389. | 68321 | ,, | 2 | $15\frac{8}{17}$ | |
| 390. | 73216 | ,, | 4 | $9\frac{7}{12}$ | |
| 391. | 48732 | ,, | 7 | 8 | $5\frac{3}{7}$ |
| 392. | 32003 | ,, | 5 | 5 | $10\frac{9}{10}$ |
| 393. | 48321 | ,, | 12 | $7\frac{11}{15}$ | |
| 394. | 29863 | ,, | 3 | 17 | $10\frac{3}{5}$ |
| 395. | 82003 | ,, | 0 | 19 | $5\frac{8}{11}$ |
| 396. | $23210\frac{5}{9}$ | ,, | 3 | 17 | $3\frac{1}{2}$ |
| 397. | $32163\frac{9}{10}$ | at | 10 | 3 | $10\frac{3}{4}$ |
| 398. | $82000\frac{6}{11}$ | ,, | 4 | 12 | $9\frac{1}{4}$ |
| 399. | $38632\frac{7}{12}$ | ,, | 7 | 10 | $2\frac{1}{4}$ |
| 400. | $21171\frac{11}{13}$ | ,, | 0 | 16 | $9\frac{3}{4}$ |
| 401. | $32916\frac{3}{5}$ | ,, | 0 | 18 | $8\frac{1}{2}$ |
| 402. | $21888\frac{8}{17}$ | ,, | 1 | 19 | $6\frac{1}{2}$ |
| 403. | $32081\frac{3}{7}$ | ,, | 6 | 13 | $10\frac{1}{4}$ |
| 404. | $37774\frac{4}{5}$ | ,, | 11 | 2 | $6\frac{3}{4}$ |
| 405. | $63333\frac{2}{9}$ | ,, | 12 | 15 | $7\frac{1}{4}$ |
| 406. | $73213\frac{7}{20}$ | ,, | 0 | 19 | $6\frac{3}{4}$ |
| 407. | $83919\frac{3}{19}$ | ,, | 0 | 11 | $2\frac{3}{4}$ |
| 408. | $70007\frac{5}{16}$ | ,, | 8 | 8 | $8\frac{1}{4}$ |
| 409. | $10011\frac{10}{11}$ | ,, | 10 | 4 | $6\frac{1}{2}$ |
| 410. | $63213\frac{12}{17}$ | ,, | 2 | 14 | $7\frac{1}{4}$ |
| 411. | 73806 | ,, | 9 | $16\frac{2}{5}$ | |
| 412. | 20017 | ,, | 8 | 18 | $2\frac{6}{11}$ |
| 413. | 39841 | ,, | 5 | 13 | $4\frac{8}{9}$ |
| 414. | 31170 | ,, | 3 | $17\frac{5}{13}$ | |
| 415. | 51732 | ,, | 4 | $11\frac{8}{17}$ | |
| 416. | 42081 | ,, | 3 | 10 | $2\frac{1}{2}\ \frac{3}{4}$ |
| 417. | 38209 | ,, | 1 | 9 | $10\frac{1}{2}\ \frac{6}{7}$ |
| 418. | 38421 | ,, | 0 | 19 | $10\frac{1}{2}\ \frac{3}{5}$ |
| 419. | 82008 | ,, | 0 | 8 | $11\frac{6}{15}$ |
| 420. | 48190 | ,, | 11 | 3 | $6\frac{8}{19}$ |
| 421. | 30033 | ,, | 12 | 7 | $6\frac{7}{17}$ |
| 422. | 91386 | ,, | 8 | $13\frac{2}{9}$ | |
| 423. | 29135 | ,, | 5 | $18\frac{3}{10}$ | |
| 424. | 32061 | ,, | 7 | 16 | $3\frac{9}{10}$ |
| 425. | 28920 | ,, | 10 | 12 | $9\frac{3}{4}\ \frac{1}{8}$ |
| 426. | $24008\frac{6}{11}$ | ,, | 3 | 8 | $4\frac{3}{4}$ |
| 427. | $47326\frac{11}{12}$ | ,, | 9 | 7 | $10\frac{1}{2}$ |
| 428. | $32009\frac{7}{9}$ | ,, | 2 | 17 | $9\frac{3}{4}$ |
| 429. | $29856\frac{4}{13}$ | ,, | 8 | 16 | $11\frac{1}{2}$ |
| 430. | $20986\frac{5}{14}$ | ,, | 11 | 15 | $8\frac{1}{4}$ |
| 431. | $86321\frac{8}{15}$ | ,, | 3 | 18 | $2\frac{3}{4}$ |
| 432. | $43208\frac{7}{18}$ | ,, | 5 | 19 | $8\frac{1}{2}$ |
| 433. | $61784\frac{11}{16}$ | ,, | 4 | 14 | $4\frac{3}{4}$ |
| 434. | $22222\frac{5}{6}$ | ,, | 0 | 9 | $10\frac{1}{2}$ |
| 435. | $66666\frac{2}{19}$ | ,, | 0 | 11 | $3\frac{1}{2}$ |
| 436. | $73206\frac{3}{17}$ | ,, | 0 | 6 | $11\frac{3}{4}$ |

| | | | £ | s. | d. |
|---|---|---|---|---|---|
| 437. | $29863\frac{8}{15}$ | at | 3 | 14 | $7\frac{1}{2}$ |
| 438. | $19909\frac{2}{17}$ | ,, | 6 | 13 | $8\frac{1}{4}$ |
| 439. | $82810\frac{4}{19}$ | ,, | 5 | 17 | $3\frac{3}{4}$ |
| 440. | $92008\frac{3}{10}$ | ,, | 4 | 18 | $6\frac{1}{2}$ |
| 441. | 72001 | ,, | 0 | 15 | $10\frac{3}{4}\ \frac{8}{9}$ |
| 442. | 43213 | ,, | 2 | 14 | $3\frac{5}{8}$ |
| 443. | 58101 | ,, | 4 | 10 | $7\frac{4}{7}$ |
| 444. | 56525 | ,, | 3 | $17\frac{9}{10}$ | |
| 445. | 62091 | ,, | 7 | 9 | $11\frac{1}{13}$ |
| 446. | 32098 | ,, | 8 | 2 | $10\frac{5}{14}$ |
| 447. | 54115 | ,, | 1 | $18\frac{9}{17}$ | |
| 448. | 48738 | ,, | 4 | $7\frac{8}{19}$ | |
| 449. | 63929 | ,, | 0 | 19 | $4\frac{3}{4}\ \frac{6}{7}$ |
| 450. | 30303 | ,, | 0 | 16 | $7\frac{1}{2}\ \frac{6}{13}$ |
| 451. | 60071 | ,, | 5 | 6 | $11\frac{1}{2}\ \frac{4}{15}$ |
| 452. | 67205 | ,, | 8 | 12 | $6\frac{5}{16}$ |
| 453. | 57682 | ,, | 9 | 11 | $8\frac{10}{13}$ |
| 454. | 33433 | ,, | 3 | 17 | $4\frac{12}{17}$ |
| 455. | 40404 | ,, | 12 | $13\frac{11}{19}$ | |
| 456. | $24186\frac{4}{11}$ | ,, | 0 | 18 | $2\frac{3}{4}$ |
| 457. | $60666\frac{4}{9}$ | ,, | 0 | 13 | $6\frac{3}{4}$ |
| 458. | $32310\frac{11}{12}$ | ,, | 12 | 14 | $10\frac{1}{2}$ |
| 459. | $48808\frac{11}{14}$ | at | 2 | 5 | $11\frac{1}{4}$ |
| 460. | $59206\frac{3}{14}$ | ,, | 5 | 11 | $7\frac{3}{4}$ |
| 461. | $82201\frac{8}{15}$ | ,, | 7 | 16 | $9\frac{1}{2}$ |
| 462. | $73241\frac{3}{17}$ | ,, | 1 | 17 | $0\frac{3}{4}$ |
| 463. | $20081\frac{7}{16}$ | ,, | 6 | 10 | $11\frac{3}{4}$ |
| 464. | $34210\frac{9}{11}$ | ,, | 10 | 19 | $6\frac{1}{2}$ |
| 465. | $41364\frac{1}{10}$ | ,, | 2 | 18 | $7\frac{1}{4}$ |
| 466. | $50180\frac{5}{18}$ | ,, | 0 | 7 | $10\frac{1}{4}$ |
| 467. | $92009\frac{12}{17}$ | ,, | 0 | 9 | $3\frac{3}{4}$ |
| 468. | $37207\frac{3}{10}$ | ,, | 1 | 12 | $9\frac{1}{4}$ |
| 469. | $30198\frac{11}{18}$ | ,, | 4 | 6 | $11\frac{3}{4}$ |
| 470. | $62689\frac{3}{19}$ | ,, | 9 | 13 | $10\frac{1}{2}$ |
| 471. | 32067 | ,, | 2 | $14\frac{5}{12}$ | |
| 472. | 83216 | ,, | 5 | $16\frac{11}{14}$ | |
| 473. | 45860 | ,, | 4 | 12 | $7\frac{4}{9}$ |
| 474. | 37209 | ,, | 8 | 17 | $3\frac{3}{5}$ |
| 475. | 74201 | ,, | 1 | 18 | $3\frac{1}{2}\ \frac{4}{11}$ |
| 476. | 64108 | ,, | 5 | 15 | $9\frac{1}{4}\ \frac{6}{17}$ |
| 477. | 32108 | ,, | 9 | $13\frac{12}{19}$ | 0 |
| 478. | 34201 | ,, | 6 | 9 | $11\frac{4}{10}$ |
| 479. | 73461 | ,, | 11 | 8 | $10\frac{6}{13}$ |
| 480. | 42167 | ,, | 7 | 7 | $4\frac{1}{2}\ \frac{3}{13}$ |

## AVOIRDUPOIS WEIGHT.

| | cwt. | qrs. | lbs. | | £ | s. | d. | |
|---|---|---|---|---|---|---|---|---|
| 481. | 6 | 2 | 8 | at | 2 | 4 | 3 | per cwt. |
| 482. | 11 | 1 | 5 | ,, | 2 | 14 | 6 | ,, |
| 483. | 3 | 3 | 11 | ,, | 3 | 12 | $4\frac{1}{2}$ | ,, |
| 484. | 10 | 1 | 17 | ,, | 1 | 17 | $8\frac{3}{4}$ | ,, |
| 485. | 9 | 3 | 23 | ,, | 4 | 15 | $9\frac{1}{2}$ | ,, |
| | tons | cwt. | qrs. | | | | | |
| 486. | 5 | 17 | 2 | ,, | 3 | 16 | $9\frac{3}{4}$ | per ton. |
| 487. | 10 | 16 | 3 | ,, | 2 | 14 | $10\frac{1}{2}$ | ,, |
| 488. | 14 | 15 | 1 | ,, | 8 | 13 | $7\frac{3}{4}$ | ,, |
| 489. | 21 | 6 | 3 | ,, | 3 | 12 | $10\frac{1}{4}$ | ,, |
| 490. | 24 | 4 | 1 | ,, | 6 | 18 | $4\frac{1}{2}$ | per cwt. |
| | lbs. | oz. | drs. | | | | | |
| 491. | 14 | 15 | 12 | ,, | 1 | 10 | $6\frac{1}{2}$ | per lb. |
| 492. | 13 | 11 | 13 | ,, | 0 | 14 | $2\frac{1}{2}$ | ,, |
| 493. | 29 | 10 | 3 | ,, | 3 | 10 | $6\frac{3}{4}$ | per qr. |

| | lb. | oz. | drs. | | £ | s. | d. | |
|---|---|---|---|---|---|---|---|---|
| 494. | 44 | 12 | 15 | at | 8 | 10 | 0½ | per qr. |
| 495. | 34 | 15 | 8 | „ | 3 | 0 | 6¾ | per lb. |

## LONG MEASURE.

| | m. | fur. | p. | | | | | |
|---|---|---|---|---|---|---|---|---|
| 496. | 9 | 4 | 16 | „ | 0 | 14 | 2½ | per mile. |
| 497. | 14 | 5 | 23 | „ | 0 | 7 | 9¾ | „ |
| 498. | 50 | 2 | 18 | „ | 1 | 3 | 2¼ | „ |
| 499. | 18 | 7 | 21 | „ | 2 | 14 | 2½ | „ |
| 500. | 33 | 3 | 25 | „ | 6 | 10 | 1½ | „ |
| 501. | 0 | 6 | 27 | „ | 0 | 10 | 3¾ | „ |
| 502. | 7 | 7 | 28 | „ | 0 | 17 | 4¼ | „ |
| 503. | 26 | 1 | 32 | „ | 0 | 13 | 6½ | „ |
| 504. | 71 | 3 | 37 | „ | 2 | 11 | 6¾ | „ |
| 505. | 84 | 5 | 38 | „ | 0 | 9 | 4½ | „ |
| 506. | 8 | 7 | 19 | „ | 2 | 16 | 6¼ | per fur. |
| 507. | 43 | 5 | 16 | „ | 0 | 6 | 8½ | „ |
| 508. | 26 | 6 | 32 | „ | 0 | 14 | 8¼ | per mile. |
| 509. | 35 | 7 | 27 | „ | 1 | 10 | 9¾ | „ |
| 510. | 45 | 1 | 15 | „ | 0 | 15 | 6¾ | per fur. |

## CLOTH MEASURE.

| | yds. | qrs. | nls. | | | | | |
|---|---|---|---|---|---|---|---|---|
| 511. | 8 | 3 | 3 | „ | 0 | 2 | 3½ | per yard. |
| 512. | 15 | 2 | 1 | „ | 1 | 13 | 6¼ | „ |
| 513. | 27 | 1 | 3 | „ | 5 | 10 | 0½ | „ |
| 514. | 26 | 3 | 1 | „ | 0 | 4 | 4¾ | „ |
| 515. | 65 | 2 | 3 | „ | 1 | 5 | 4½ | „ |
| 516. | 100 | 2 | 1 | „ | 0 | 7 | 10¼ | „ |
| 517. | 97 | 1 | 3 | „ | 0 | 3 | 11¾ | „ |
| 518. | 43 | 3 | 3 | „ | 0 | 17 | 2½ | „ |
| 519. | 29 | 2 | 0 | „ | 1 | 0 | 11¾ | „ |
| 520. | 103 | 3 | 1 | „ | 2 | 6 | 1½ | „ |

## SQUARE MEASURE.

| | sq. yds. | ft. | in. | | | | | |
|---|---|---|---|---|---|---|---|---|
| 521. | 9 | 5 | 80 | „ | 1 | 0 | 6½ | per sq. yd. |
| 522. | 22 | 7 | 100 | „ | 2 | 1 | 3¼ | „ |
| 523. | 24 | 3 | 130 | „ | 2 | 3 | 4 | „ |

| | sq. yds. | ft. | in. | | £ | s. | d. | |
|---|---|---|---|---|---|---|---|---|
| 524. | 72 | 1 | 140 | at | 0 | 12 | 9½ | per sq. yd. |
| 525. | 28 | 0 | 63 | ” | 0 | 5 | 10¾ | ” |
| 526. | 54 | 2 | 35 | ” | 2 | 10 | 5¼ | ” |
| 527. | 6 | 5 | 72 | ” | 0 | 15 | 10¼ | per sq. ft. |
| 528. | 33 | 6 | 120 | ” | 1 | 12 | 0¾ | ” |

| | a. | r. | p. | | £ | s. | d. | |
|---|---|---|---|---|---|---|---|---|
| 529. | 25 | 3 | 25 | ” | 3 | 6 | 7½ | per sq. ac. |
| 530. | 42 | 2 | 36 | ” | 2 | 11 | 6¼ | ” |
| 531. | 55 | 3 | 33 | ” | 3 | 15 | 4¼ | ” |
| 532. | 73 | 1 | 16 | ” | 0 | 15 | 3¾ | ” |
| 533. | 42 | 2 | 27 | ” | 14 | 10 | 0¼ | ” |
| 534. | 9 | 1 | 38 | ” | 10 | 0 | 1½ | per rood. |
| 535. | 25 | 3 | 25 | ” | 0 | 10 | 3¼ | ” |

## CUBIC MEASURE.

| | cu. yds. | ft. | in. | | £ | s. | d. | |
|---|---|---|---|---|---|---|---|---|
| 536. | 4 | 24 | 216 | ” | 9 | 9 | 0 | per yard. |
| 537. | 35 | 1 | 0 | ” | 4 | 14 | 6 | ” |
| 538. | 34 | 19 | 854 | ” | 7 | 11 | 6 | ” |
| 539. | 63 | 16 | 1512 | ” | 7 | 8 | 6 | ” |
| 540. | 9 | 17 | 504 | ” | 1 | 11 | 8 | ” |
| 541. | 66 | 7 | 1440 | ” | 1 | 18 | 9 | ” |
| 542. | 145 | 6 | 192 | ” | 2 | 18 | 8 | ” |
| 543. | 10 | 25 | 360 | ” | 0 | 11 | 9½ | ” |
| 544. | 42 | 23 | 643 | ” | 1 | 17 | 10¼ | ” |
| 545. | 118 | 10 | 216 | ” | 1 | 4 | 10 | ” |

## TROY WEIGHT.

| | lb. | oz. | dwts. | | £ | s. | d. | |
|---|---|---|---|---|---|---|---|---|
| 546. | 10 | 6 | 15 | ” | 0 | 4 | 3¾ | per lb. |
| 547. | 15 | 9 | 17 | ” | 2 | 5 | 8¼ | ” |
| 548. | 17 | 7 | 16 | ” | 1 | 17 | 4½ | ” |
| 549. | 23 | 11 | 19 | ” | 0 | 5 | 3¼ | ” |
| 550. | 43 | 5 | 12 | ” | 1 | 0 | 6¾ | ” |
| 551. | 29 | 3 | 18 | ” | 3 | 15 | 5½ | ” |
| 552. | 61 | 10 | 15 | ” | 0 | 2 | 4¼ | ” |

| | oz. | dwts. | gr. | | £ | s. | d. | |
|---|---|---|---|---|---|---|---|---|
| 553. | 10 | 15 | 20 | ” | 1 | 12 | 4 | per oz. |
| 554. | 9 | 11 | 22 | ” | 3 | 10 | 5 | ” |
| 555. | 11 | 16 | 4 | ” | 1 | 12 | 3½ | ” |
| 556. | 7 | 18 | 21 | ” | 3 | 19 | 3¾ | ” |

| | oz. | dwts. | gr. | | £ | s. | d. | |
|---|---|---|---|---|---|---|---|---|
| 557. | 11 | 17 | 23 | at | 0 | 12 | 0½ | per oz. |
| 558. | 6 | 19 | 20 | „ | 0 | 3 | 10¼ | „ |
| 559. | 8 | 14 | 13 | „ | 1 | 3 | 6¾ | „ |
| 560. | 8 | 13 | 16 | „ | 1 | 10 | 9½ | „ |

## APOTHECARIES' WEIGHT.

| | lb. | oz. | drs. | | | | | |
|---|---|---|---|---|---|---|---|---|
| 561. | 15 | 10 | 3 | „ | 0 | 15 | 2½ | per lb. |
| 562. | 25 | 8 | 6 | „ | 0 | 7 | 9¾ | „ |
| 563. | 44 | 7 | 7 | „ | 1 | 0 | 2½ | „ |
| 564. | 37 | 3 | 5 | „ | 2 | 5 | 6¼ | „ |
| 565. | 29 | 11 | 4 | „ | 3 | 10 | 3½ | „ |
| 566. | 53 | 9 | 7 | „ | 4 | 3 | 8½ | „ |
| 567. | 4 | 5 | 5 | „ | 0 | 12 | 3¾ | per oz. |
| 568. | 24 | 3 | 7 | „ | 0 | 1 | 11½ | „ |
| | oz. | drs. | sc. | | | | | |
| 569. | 34 | 5 | 1 | „ | 4 | 10 | 3¼ | „ |
| 570. | 72 | 3 | 2 | „ | 5 | 11 | 6¾ | „ |
| 571. | 47 | 6 | 1 | „ | 2 | 13 | 3¼ | „ |
| 572. | 49 | 5 | 2 | „ | 0 | 14 | 6½ | „ |
| 573. | 70 | 7 | 1 | „ | 1 | 0 | 0¾ | „ |
| 574. | 41 | 1 | 1 | „ | 0 | 18 | 11¼ | „ |
| 575. | 52 | 3 | 2 | „ | 5 | 0 | 9½ | „ |

## WINE AND SPIRIT MEASURE.

| | hhds. | gals. | qts. | | | | | |
|---|---|---|---|---|---|---|---|---|
| 576. | 7 | 33 | 3 | „ | 10 | 13 | 4 | per hhd. |
| 577. | 15 | 40 | 3 | „ | 12 | 14 | 2 | „ |
| 578. | 16 | 37 | 2 | „ | 17 | 13 | 8 | „ |
| 579. | 23 | 35 | 1 | „ | 12 | 0 | 3 | „ |
| 580. | 40 | 47 | 3 | „ | 2 | 11 | 7 | „ |
| 581. | 1 | 27 | 2 | „ | 2 | 10 | 0 | per gal. |
| 582. | 5 | 43 | 3 | „ | 1 | 3 | 6½ | „ |
| | pun. | gals. | qts. | | | | | |
| 583. | 5 | 52 | 1 | „ | 13 | 16 | 4 | per pun. |
| 584. | 12 | 60 | 3 | „ | 14 | 17 | 4 | „ |
| 585. | 9 | 65 | 1 | „ | 15 | 0 | 3 | „ |
| 586. | 11 | 36 | 2 | „ | 16 | 14 | 5 | „ |
| 587. | 16 | 28 | 2 | „ | 14 | 0 | 9 | „ |

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